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ORIGINAL ARTICLES.

ARTICLE I.

FORCES PRESERVING CEREBRAL INTEGRITY, WITH REPORT AND STUDY OF CEREBRAL, MENINGEAL AND SPINAL LESIONS.*

By W. LOCKE CHEW, B. S., M.D., Nov. 13, 1888, Birmingham, Ala.

In considering the mind, and in a study of mental action, it is, indeed, difficult to keep aloof from the theoretical and away from the speculative; to separate the entity—cerebrum from the functional—

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*Read before South Surgical and Gynæcological Association, Birmingham, Ala.

mind. It is more difficult to depart totally from the influence of the teachings of the fathers in physiology, and, in an honest way, tell one's opinions of cerebral action, from what he himself has seen. This is all that is hoped. There is no desire to demonstrate a new principle, but a hope to record certain clinical facts, which, in their interpretation, explanation and solution, may point to a different method of analysis and mode of study bearing on cerebral activity, exercise and pathology.

The cerebral cell draws nothing from the mind. So long as the cerebral cell or group of cells are in typical health, the mental action of the individual will be uniform, stable, normal. Disease that cell, or group, and the mind is deranged. The mind is totally dependent on the condition of the functionary cells. Resting the mind does but little or no good toward restoring the integrity of diseased cerebral tissue. In other words, the action of the mind has but slight influence either to restore or degenerate cerebral substance. The mind is a function dependent wholly on the conditions of the cerebral substance, forming, indeed, a minor portion of its duties. The mental functions act only intermittently and temporarily. Some portions of the brain are without mental functions. Their disease need not cause mental aberration.

What then, is there to maintain the integrity of these centres? What the integrity of the brain?

The essential functions of the brain—as consciousness, will, moral act, imagination, reason, etc., are the factors claimed to preserve the integrity of the cerebral cells; that in the exercise of any one of these separate factors that there is such molecular vibration, as alone to exercise and preserve the cells. Is it rational to accept this theory? If this was the true solution, then there are three requisites, viz.:

First. That each and every cell or centre be controlled by and have mental function; which is not true.

Secondly. That the mental function must precede the development of the cells, and by its inherent force call forth the cell; which is not the case.

Thirdly. That use or disuse of these functions would regulate the grade of development of the cell; which we do not find.

If these essential functions maintain the integrity of the brain, it would appear that they must develop, before or simultaneously with it; but on the contrary, we see the most typically healthy brain, spring well grown into action—the most developed part of the new born, having never before exercised one of these essential functions. It is evident, therefore, that these essential functions had nothing to do with the anti-natal growth and development of the brain; but that other causes effected this growth. Is it reasonable to contend that certain causes developed the brain of the fœtus, and that at its birth these were suddenly suspended and other, yet totally different causes, were substituted? That this new agent regulates its growth, development and force, and that its exercise is completely changed? Is is not far more likely that the same causes which grew the fœtal brain, act after birth for further growth and development? It is conceded further, that this cerebral growth and development in the fœtus is the result of the quantity and quality of the blood directed to the brain by the anatomical arrangement of the vessels. To the volume and purity of this blood current its development is due. This kneadation and nutrition is the developing and preserving function of the fœtal brain.

How with the adult? Just the same. It is claimed that one-fifth of all the blood goes to the adult, head and brain. In the study of this question, in the adult there are interesting observations to take into consideration.

I. MOBILITY OF THE ENCEPHALON IN THE CRANIAL VAULT.

The normal cranial vault is far from full of cerebral substance. The brain has upward, downward, anterior and posterior motions. The encephalon is not fixed, but, at each systole of the heart, is raised on the volume of the blood current, compressed against the inner table of the vault of the cranium, causing the blood filling the sinuses at the vertex to flow to those at the base. These sinuses having been compressed, stand, consequently, empty to receive the blood from vertex. As the arterial blood passes through the circle of Willis (the brain is elevated), then into the small vessels, the brain is expanded, the arterial force being removed from below the brain, at the same time sinks down, compressing the now distended sinuses at the base, forcing the blood into the vessels of the neck and thorax. In other words, the systole and dyastole of the heart causes a corresponding systole and dyastole in the brain. The brain is thus kneaded at each heart action. This kneadation is further aided by the cerebro-spinal fluid, which aids in equalizing pressure. This motion is constantly seen through the windowed skull at the fontanells and in wounds of the vessels (venous) of the neck. Operations on the brain for epilepsy show how the brain can retreat from the instrument. Sir Wm. McEwen, of Edinburgh, speaking of anchored encephalons, says:

"It has no longer the free play within its watery bed to expand and contract according to the varying state of the circulation."

II. THE VASCULARITY OF THE CEREBRAL SUBSTANCE.

The cerebral substance is not so vascular as was formerly judged, and never have I noted fatal hæmorrhage occurring from wounds of the brain alone, uncomplicated by wounds of large vessels or sinus. Shot wounds of the brain rarely bleed or ooze alarmingly. Probatory exploration of the brain yield no bad results from bleeding. Wounds of the vertex complicating fractured skull seldom frighten us with hæmorrhage. In the evacuation of cerebral abscesses, troubled hæmorrhage is the exception.

From what has been said already, taken with the anatomical arrangements of the arteries at the base of the brain, the distribution of the vinous sinuses, and the location of the plexuses, together with the pressure and action of the cerebro-spinal fluid, we judge these anatomical peculiarities are arranged for a purpose, and that purpose appears to be the kneadation and the mechanical exercise of the brain.

The following cases, which have appeared in Southern medical journals, go far toward bearing out these principles:

Case I. Compound Comminuted Fracture of Frontal Bone and Bones of Face, with Division of Superior Longitudinal Venous Sinus.—Septic Meningitis with Œdema—Death.

William Howard, admitted October 27, 1888; negro man, æt. 26 years, in excellent general health, was boasting of having caressed sexually a Caucasian woman, when he was struck a violent blow with what is supposed to have been the four-pound iron mall used to drive spikes in the railroad ties. The blow, directed downward and to the left, impinged on the hairy scalp, one and one-half inches from the border line of forehead and three-quarters of an inch to right of median line. So forcible was the blow that the tissues to the bone were divided, cleanly cut. The mall struck the skull three-quarters of an inch to right of median line and one inch above the frontal eminence, one inch and a quarter from suture with parietal bone. The entire frontal bone was torn away to within one inch of the external angular process on either side. The internal three-quarter circumference of either orbit was removed, together with the nasal eminence and inner half of both superciliary ridges, and the internal half of right and inner third of left frontal eminence and frontal crests. Of the orbito-nasal portion of the frontal bone it is sufficient to exhibit the entire vault of either orbit, and state that the right lachrymal gland was dislocated from its fossa. The right bulb was ruptured and the media escaped; right optic nerve and muscles of right orbit lacerated; the right ophthalmic vein was twisted and lacerated; the ethmoidal notch, together with the crista gallia and cribiform plate of the ethmoid were removed. The end of the mall passed on, fracturing the ethmoid, both nasals, both turbinated and both superior maxillæ, and the vomer. The right-superior maxilla was dislocated downward by one-half to three-quarters of an inch.

Being called to such an injury one looks for the points of emergical danger. The right frontal bone was contused and lacerated, and the dura torn and the cerebral substance lacerated and escaping. On sponging this away I discovered a complete laceration of the superior longitudinal venous sinus and falx cerebri. The vein passing through the foramen cæcum was nowhere to be found. The superior longitudinal venous sinus was so traumatized and torn that it was twisted into a short cord, one inch back of the anterior margin of the frontal lobes. Bubbles of air passed up through the left orbit from the antrum of Highmore. The dura was separated from the skull for three inches from the nasal eminence in every direction. The anterior margin of the anterior cerebral lobes was one and one-fifth inches from the nasal eminence. The anterior margin of the anterior cerebral lobes were nearly or quite at the spenoidal fissure. On change of position the lobes would present at the wounds in the skull. The fragments were removed from the brain cavity, washed and cleansed, and the cavity plugged with a 26-inch bandage, soaked in 1.3500 of corrosive chloride solution. Skin approximated and sutured.

The progress of the case was remarkable, in that the temperature stood at 98 degrees in the forenoon and 99 degrees to 101 degrees at night. There was some muscular twitching on the second day which subsided. The wounds of skin healed kindly, and the packing was removed on third day. After removal of this all went wrong. The brain soon became congested, and death rapidly supervened from inflammation at the base of the brain.

Death again was hard to combat, for the reason that drainage could not be secured without the entire withdrawal of the cerebro-spinal fluid, and where such a quantity of this escaped a fatal œdema was induced. Further, too, the wounds of the face were sufficient to cause a fatal termination. Life being continued to the fourth day I regard as a successful treatment, for the patient was for three days thoroughly rational; was able to make a legal statement of facts, a confession, and have administered the last sacraments—all of which was gained by this delay of death. Dr. A. T. Henley was with me in this case.

Noteworthy Points: I. The Mobility of the Brain in the Cranial Cavity.—The position of the brain in the skull as the patient lay in the dorsal decubitus, the anterior margin of the anterior lobes of the brain rested two-fifths of an inch *in* advance of the sphenoidal fissure, one inch from where we know it normally rests, and the brain was without pulsation. On a change of position, the patient resting on the face and abdomen, the brain presented at the window in the frontal bone. From these measurements it appears that the brain is capable of decided motion within the cavity of the skull, having anterior posterior motion of three-quarters of an inch. The readiness of this motion is decidedly increased from the normal by loss of the cerebral fluid, which acts as a prop, and prevents the excessive free motion of the brain in health.

II. Note the *lack of fatal hæmorrhage* from the wound of the superior longitudinal sinus, laceration of the falx cerebri, probable rupture of the inferior longitudinal venous sinus and rupture of the right ophthalmic vein. Such wounds one would judge rather fatal from various causes—(*a*) air embolism; (*b*) hæmorrhage, etc.

Theory only frightens the surgeon in regard to the embolism of air. Notwithstanding it happened to Volkmann in the removal of a sarcoma from the vertex of the skull, yet this must be a theoretical danger, as it is difficult for air to descend along the course of the longitudinal venous sinus to the torcular herophilii, no matter what the position of the patient. This danger I would consider slight as compared with that of the fatality from hæmorrhage from wound of sinuses. Yet this mortality from hæmorrhage is not so great as one would expect. As in this case we see simply the traumatism of the blow that divided the sinus, so twisted it that the hæmorrhage was checked. I only packed around the divided and twisted end a snug gauze dressing; nor was there a recurrence of the bleeding. Indeed, one reads of complete division of the superior longitudinal sinus, while the suturing of the ends with fine thread in cases of tumors of the cerebrum, without fatal issue (Bergmann), and the packing of the cavity and compressing the sinus in a number of cases.

Division of the sinuses near the anterior extremity is of less danger than at their posterior extremities. These dangers are in three forms, viz.:

(*a*) Dangers from air embolisms increased.
(*b*) Increased dangers from profuse hæmorrhages.
(*c*) Dangers increased from cerebral œdema.

It appears, however, that a sinus may be divided at any point of its course without fear of fatal œdema, though that is always an element of danger; but the division of two renders such dangers a maximum if not necessarily fatal from this cause. (Shellman.)

[Dr. Wm. A. Hume, of New York, in *Record* of February 16, 1889, reports a similar case, where hæmorrhage from the superior longitudinal sinus stopped spontaneously.]

Case II.—Compound Comminuted Fracture of the Skull, with Depression—Recovery.

November 26, 1886, was called to Leonidas Whistle, a negro boy, æt. 16 years, who, while trying to check a runaway horse, was knocked down by the breast of the animal, which, in its fright tried to leap him. The boy was thrown several yards up the street on the furnace slag, striking with great violence, which was increased by the weight of the horse, which alighted with both feet on the boy's head and throat, inflicting the following injuries:

The calk of one shoe struck the scalp near the center of the left parietal bone, dividing the tissues to the skull, passing forward toward the median line, across the coronal and frontal sutures to a point a little to the left of the right frontal eminence, at which point it entered the skull causing a compound comminuted fracture, with depression of the frontal bone one and a quarter inches square. The central fragment, one inch square, was dislocated under the edge of the unbroken shelving bone, between it and the dura mater, toward the external orbital ridges. There were four other fragments depressed, making compression on the dura mater and brain, the dura mater being untorn. The other calk of the same foot made an inch lacerated wound in the left cheek. The other foot struck the chin and larnyx—the chin wound, one inch deep, passing under the maxillary symphisis toward the floor of the mouth. A second wound compressed the cartilages of the larnyx, tearing the cuticle of the neck three inches, starting from the median line at the upper border of the hyoid bone, passing toward the right ear parallel to the lower border of the inferior maxilla, causing great tumefaction and considerable oozing. In the right occipital region there was a large sub-aponeurotic cephalhematoma, two or three inches in diameter. When seen first, patient lay in a condition of coma, on left side, with extreme flexure of all the members and marked difficulty of breathing. Pupils normal. No other symptoms, excepting profuse scalp hæmorrhage.

Boy conveyed home. Scalp, neck and face thoroughly cleansed and shaven at the hands of Dr. Brice M. Hughes and myself; irrigated with bichloride solution and carbolized water. Patient anæsthetized. Scalp wound enlarged toward the external orbital ridge. Dr. Hughes, with the Pean hemastatic forceps—which is as good a grasping forceps as I know of for light work—removed, after some difficulty, the central displaced fragment. The remaining four fragments I was enabled to remove without the use of any other instrument than my fingers and strong forceps. These five constituted the comminution. The cerebral substance of right frontal lobe was considerably lacerated, as could be felt through the unbroken dura mater which bulged through the aperture from blood beneath it, due to hæmorrhage from the brain and meninges. This membrane was not incised and the blood evacuated, but was permitted to remain as it was. The bones of the skull were smoothed, and all irritations removed. Wound thoroughly cleaned and dried, edges of scalp pared and approximated, sutured with a small antiseptic silk, no point of drainage being preserved, the attempt being made to convert it into a simple fracture by securing primary union. Wound thickly dusted with amorphus boracic acid, and a thick permanent bichloride dressing applied. Wounds on face, chin and neck treated on same plan.

Progress of Case.

Recovery was rapid and complete. Primary union of scalp, with ready absorption of subdural clot and cicatrization of other wounds without pus. On the sixteenth day he was discharged, and since then he enjoys good health in every way.

Noteworthy Points.

(*a.*) The rapidity of the union of the scalp appears due to the antiseptic precautions, together with the paring of the edges and application of the permanent corrosive chloride dressing.

(*b.*) The conversion of the fracture into a simple fracture by gaining immediate union was a point gained, as it rendered the skull less liable to caries and necrosis, as it freed it from such irritants as pus, air, etc., and lessened the dangers of meningeal complications.

(*c.*) We feared no compression from the hæmorrhage beneath the dura mater, as this seemed to be checked, and there was ample room for bulging through the trephined hole. Note again the preservation of the dura mater, even though there existed a large blood accumulation beneath it. I preserved it to prevent suppuration in the blood clot and cerebral substance, for, notwithstanding Sir Prescott Hewitt says:

"In every case of contused bone in which I have found inflammation on the outside surface of the dura mater, I have also found inflammation on the free surface of the arachnoid," yet this inflammation may differ in kind. It may be a suppurative inflammation between the bone and dura mater, and yet this membrane so shields the parts that we find but plastic lymph on the arachnoid. Thus the great service rendered by this membrane in suppurative inflammation between the skull and dura mata was shown by Mr. Pott, who relieved three out of five of these cases by bold early operation. Lately surgeons have failed to attain these good results; but this is not due to any failure of the dura mater to limit suppuration for a time, but to delay the operation, the membrane undergoing dissolution being bathed in accumulated pus. We were justified in expecting some suppuration from the contused bone, this bone being in communication with the air.

(*d.*) What became of the remaining blood clot beneath the dura mater?

I suspect the absorption of its watery portion was due in part to the withdrawal of all fluids from the patient, but principally to its dilution by cerebral fluid, which prevented coagulation, together with the throbbing action of the brain, which, constantly needing it, promoted its absorption. The solids molded themselves to the parts and became a thin organized membrane, doing no damage.

Dr. Charles B. Nancrede, speaking of these sub-dural clots, says: "After the disk has been removed the dura mater bulges into the opening, is of a bluish appearance, and is devoid of pulsation. The membrane should then be incised to give free vent to the effused blood." But these occur in cases where there is marked depression from the clot, and not in cases similar to the one here reported, where there is no compression and the blood not an irritant.

(*e.*) I regret that I did not make an effort to replace the fragments and so fill out the window, after the method of Sir Wm. Macewen; but at that time this method was not known.

Case III.—Compound Fracture of Skull with Depresssion—Six Years Later Epilepsy, Due to Cyst and Anchorage of the Brain—Trephining.

Mr. D., æt. 24 years. In this case the notable points are that the operation was done without an anæsthetic, with the patient in an upright position. To see the action of the brain, as the patient suffered shock, was an interesting phenomenon. At one moment it would protrude through or present forcibly against the windowed skull, and at another it would retreat more than half an inch from the inner tables. At such times I thought he was to be seized with a paroxysm. I assisted in the operation. The surgeon feared or declined to give an anæsthetic.

Case IV.—Gun-Shot Wounds of Brain.

I only wish to report the case of Mr. L., æt. 36 years, who received two pistol-shot wounds of the upper portion of each cerebral hemisphere. With this injury he survived seventy-eight hours, during which time the loss of blood, or watery oozing, was practically *nil*. Post-mortem showed great laceration of cerebral tissue.

Case V.—Iron Rod Thrust of Temporal Lobe.

This was a through and through thrust with a coal poker. The cerebral substance was extremely damaged. The rod was retained in the wound a few minutes before it was withdrawn. Notable lack of bleeding.

Case VI.—Compound Comminuted Fracture of Frontal Bone—Loss of Cerebral Substance—Recovery.

P., negro, æt. 5 years There was loss of more than a drachm of brain substance, accompanied and followed by little or no bleeding. Fragments of bone removed attended with suppuration, and followed by complete recovery. Other than the suppuration it was similar to case II.

Case VII.—Two Gun-Shot Wounds of Brain.

J., æt. 23. This case has nothing more than is told in Case IV. unless there was even less oozing and a greater escape of cerebral substance.

In offering these records, I trust you may all understand me; for, being unsatisfied with the theory that "molecular vibration," due to mental action, was the force which developed and preserved the brain, I turned elswhere for its solution, and think that in the mechanical forces we find enough to account for its growth and development aside from mental causes. Many arguments might be brought forward in further support of these facts, but in so short space I needs must defer them.

ARTICLE II.

CALCIFICATION OF CARDIAC LEFT VENTRICULAR WALL FOLLOWING SUB-ACUTE VERRUCOSE ENDO-CARDITIS.*

By DR. F. E. MARTINDALE, Richmond Co., N. Y.

The following abstract of a history of what was regarded at the time as a sub-acute endo-carditis with circumscribed peri-carditis, involving within the left ventricular chamber of the heart the formation, within fourteen days after the attack, of a small verrucose growth, which becoming detached, immediately thereafter became the etiological factor of an embolic infarction of the right radial, formed the text of a paper read before the Medical Society of the State of New York, at its eighty-first annual session, being published in its volume of Transactions, for 1887, a concise review of which, on this occasion, becomes necessary to a satisfactory comprehension of such facts as the termination of the case and its post-mortem developments have since disclosed.

L. H. F., æt. 73 years, a resident of New Springville, in the County of Richmond, returning from a visit to relatives near Morristown, N. J., April 13th, 1886, was suddenly attacked after half an hour's ride with intense pain in the pre-cordial region—dyspnœa, accompanied with cold perspiration and a sense of impending dissolution. Being reconveyed to the residence he had but just left the usual appliances of friction, counter irritation and a free administration of stimulants, were at once brought into requisition, with the result, after some three hours of continuous effort, of securing partial relief, the dyspnœa remaining as a permanent symptom of some serious derangement of the circulatory apparatus, the nature of which, their great distance from any physician, rendered it impracticable, at the time, to determine. The following morning, April 14th, in spite of his apparently precarious condition, he and his wife returned home, distant some thirty-six miles, reaching there late in the afternoon, after a tedious journey of eight hours.

I was called to the case the following morning, April 15th, and at once entered upon a careful physical examination of the patient. General appearance indicative of exhaustion, and attention arrested by an occasional dry cough, which it was ascertained had developed since the attack of the previous morning. Face flushed and expressive of anxiety; tongue lightly coated with a white fur; bowels constipated; pulse,

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*Read at the Fifth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, on May 28, 1889.

100, and weak, intermitting every third beat; temperature, 101.5°; had experienced slight chilly sensations on the way home. Auscullation revealed some coarse rales at the base of the left lung, and an indistinct friction sound about two centimetres to the left of the junction of the third and fourth ribs with the sternum; cardiac area moderately enlarged laterally and upwards with an exaggerated respiratory murmur over middle and lower lobes of right lung; left less resonant on percussion above parasternal line touching lower border of fourth rib, three centimetres to the left of its sternal junction; apex beat scarcely perceptible, a feebly pronounced purring sound taking its place; marked epigastric tenderness; area of hepatic dullness enlarged; analysis of urine develops neither albumen or sugar; considerable cough with frothy sputum; diagnosis, sub-acute endo-carditis with circumscribed peri-carditis at or near cardiac base; etiology obscure, there being no history of either acute or chronic rheumatism, acute or chronic parenchymatous nephritis or any of the exantherus save rubeola and scarlatina and these lightly in childhood as nearly as could be remembered.

Muscular effort having been strictly forbidden, the patient was thereafter seen every third day, a gradual abatement of the symptoms becoming apparent, and the precordial oppression and sense of weight, with occasional slight exacerbations, diminishing under the treatment adopted, with concurrent and gradual diminution of the peri-cardial effusion, which at no time exceeded a moderate amount. The friction sound however, remained, and seemed more distinct than at the onset of the attack, demonstrating, as was believed, an extension of the inflammatory process from the serous lining of the peri-cardium to that of the left lung,* Rosenstein claiming such result to be of frequent occurrence even from the endocardium. By the 21st of April all febrile symptoms had disappeared and the temperature never rose thereafter above 100°, the patient being up and about his room in opposition to my advice that he abstain from muscular effort in view of the cardiac irritability and possible serious results accruing. The intermit in the pulse by April 27th had become reduced to every seventh beat, the systolic impairment being supposed to be due to a mitral insufficiency as etiologically evidenced by the faint purring sound heard at the cardiac apex. The pre-cordial oppression, of which the patient had complained more or less constantly, was felt at this period, in the recumbent position only, and great weakness and anxiety were being manifested.

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*Ziemssen, vol., vi., p. 84.

On May 1st. the intermission of the heart beat had entirely disappeared, but the apex murmur still remained as a symptom of endocardial irritability. The dyspnœa that had been the cause of the patient's chief distress ceased, and the relief experienced from its disappearance, with an improved appetite, encouraged the hope of permanent relief from his disability, when, on May 3rd, I was sent for hurriedly, patient being in great pain in the right fore-arm. Examination showed the right hand cold and livid, and the radical pulse absent, that of the brachial at its bifurcation being full and regular and that of the left, normal as to rythm. Temperature, 98° 5′, pulse, 76. General conditions in other respects improved. A curious coincidence in connection with this complication was the alternation noted in the supposed mitral bruit that had previously been quite pronounced it becoming thereafter much less distinct, whilst the force of the cardiac contraction was increased.

The lesion was at once diagnosed as an embolic infarction of the right radial, the point of occlusion being at or near the brachial division, as manifested by the lividity and low temperature of fore-arm and hand and the combined numbness and pain referred to the elbow. May 6th, there developed recurrent dyspnœa, pain in both legs and œdema of feet and ankles. May 20th, feeble pulsation was detected below the point of infarction and pain and œdema of lower extremities had disappeared.

On the 20th of June a like train of symptoms recurred, the dyspnœa being even more intense than before, necessitating the patient's maintaining an upright position to secure sleep.

By the 1st of July a very appreciable improvement had again been inaugurated, but it was not until the early part of August that the rythm of the right radial had become at all comparable with that of the left, but slight modifications of the precordial bruit being in the meanwhile observed.

From a careful inquiry into the history of the patient, previously to his locating on S. I., it was ascertained that as far back as in 1870 he had been a resident of, and engaged in business in, the city of Brooklyn, N. Y; that on or about June, 1873, having been previously in good health, he was suddenly attacked with a series of symptoms as alarming in their intensity as were those of the initiatory stage of the then existing disability.

Dr. A. W. Shepard, the family physician, being summoned, made a diagnosis of angina pectoris, and administered a hypodermic injection of a solution of morphiæ for its relief. After some two weeks treatment without positive results, Dr. Howison J. Johnstone was called as consultant and a diagnosis of some cardiac lesion rendered, the precise nature of which it was impracticable to obtain any positive knowledge concerning. Remaining under the care and observation of these gentlemen a year or thereabouts and the patient's health continuing infirm, a change of location was advised, whereupon in June, 1874, he removed to his late residence on Staten Island, where he had successfully conducted a small farm with decided and uninterrupted improvement in health to the date of the disability herein recorded.

The foregoing has presented as concise a record of the symptomatology and general characteristics of this interesting case up to August, 1886, as the fragmentary notes taken at the time have permitted, the whole constituting the history reported as hereinbefore mentioned, the continuation of which, down to the date of its fatal termination October 23, 1887, becoming indispensable to a correct appreciation of its progress, termination and post-mortem revelations, as subsequently observed.

The patient's general health had so far improved by August 1st, that but one visit was made during the month, on which occasion he was seen employing himself in light work about his place and enjoying comparative freedom from most of the distressing symptoms that had, up to that time, rendered his life a burden. At this period the auscultatory evidences pointed to a chronic mitral insufficiency, representing to some extent, at least, the first, and certainly, to a much greater degree, the last endo and pericardial attacks, and it became more and more clear, notwithstanding the pathononionic symptoms were in apparent recession, that even should the patient survive for any length of time, he would certainly labor under a permanent cardiac insufficiency with more or less remote compensatory hypertrophy, dilatation and the functional disturbances resulting therefrom.

From August 5th to December 17th, no further visits were made.

Upon the latter date, however, I was sent for to prescribe for œdema of feet and ankles which had then reappeared, the cardiac insufficiency becoming again progressive with its accompanying dyspnœa and the pericardial line of dullness again rising. Patient was thereafter seen every fourth or fifth day up to February 17, 1887, at which time his physical disabilities were again so far relieved by increased compensation as to warrant the discontinuance of further visits. On the 9th of April, I was again called in attendance, œdema of the lower extremities being again on the increase. The percussion note over the lower third of the pericardial triangle was flat and the indications generally pointed to a gradually progressive infiltration of the connective tissues. From May 1st to July 3rd, œdema of the lower extremities had extended to the middle third of the thighs and implicated the scrotum and prepuce, and dyspnœa had again become so serious a factor as to render the recumbent position impracticable, and thereafter, up to the last two days of life, sleep could only be obtained leaning forward in an easy chair.

By the middle of September, the anasarca had become general and the percussion note over the lower lobes of both lungs dull. By the latter part of September, the pulse in both wrists was barely perceptible by reason of the general infiltration and heart failure. Œdema of the lungs gradually supervening the patient died on the evening of October 23rd.

Since the middle of December, 1886, albumen urea had been present in a very slight degree, increasing in the last two months of his life to about two and a half per cent.

Autopsy held October 25th with the following results: Rigor mortis moderate; cyanotic colorations; general anasarca; a large amount of serous fluid in both pleural cavities and peritoneum; considerable hæmorrhagic effusion in pericardium; apex of heart drawn backwards and attached to the middle lobe of the left lung, its removal being accomplished only after considerable effort, the connective tissue binding the two together and involving the two layers of peri-cardum and pleura, having undergone calcific degeneration, the left ventricular wall at this point having become fixed and non-contractile; liver diminished in size, no ossific deposits being noted; kidneys cyanotic and slightly increased in size capsules very firmly adherent; cortical surface pale and finely granular; heart removed as shown in the specimen before you. Hypertrophy and dilatation, as will be seen, are moderately pronounced, notwithstanding the shrinkage involved from its lengthy immersions in an aseptic fluid. As may be further noted, no valvular lesions are present with the single exception of a tendinous spot on one of the mitral folds.

The only cardiac lesion found, if that may be regarded as such, excluding compensatory hypertrophy and dilatation, is the circumscribed calcification of the left ventricular wall as beautifully demonstrated in the specimen.

That a peri, as well as an endo-carditis, must have preceded the pathological conditions observed, there can be no doubt, which being granted, the original diagnosis was at fault only in attributing the apex murmur to a mitral stenosis rather than a roughened and unyielding ventricular endo-cardial surface.

Now, in reviewing the history of this case, we are brought to the consideration, from a scientific standpoint, of some important questions relating to the etiology of this lesion. First, was the initial attack of June, 1873, an endo or a peri-carditis and to what degree were either or both concerned as factors in the subsequent permanent calcific degeneration. The preceding history gives us no satisfaction regarding this point, yet from a pathological point of view there must have been an etiological factor behind the first attack, for all leading authorities agree that primary idiopathic peri-carditis is of such rare occurrence, as to practically exclude its consideration in this connection. In the few cases recorded it has been regarded as of greater probability that the lesions were of secondary origin, the primary etiological factor as claimed by Bamberger,* in most cases, having escaped observation, this fact having been rendered the more obvious by the experience of Duchek,† who has shown, out of eighty-nine cases reported, that but two could be regarded as having been of a possibly primary origin. ‡Bauer states there are sometimes pathological changes in the muscular tissue of the heart itself, leading to peri-carditis *of secondary origin*, but that the primary is all but universally of traumatic derivation.

So also in regard to primary endo-carditis, there is absolutely nothing known of a positive character concerning it. Virchow§ has urged that a certain defective development of the cardiac vessels may act as a primary cause, but a generally prevailing opinion seems to oppose any such view. We are therefore forced to the conclusion that the cardiac disability of 1873 in this case must have had either a rheumatic or an exanthematous lesion as its etiological factor at so early a period in the individual history of the subject, as to have produced no permanent impression upon the memory. With this starting point there is a possibility of reaching a definite conclusion with regard to the question at issue. In the initial stage of an acute pericarditis marked derangements of respiration are noticed particularly if the cardiac muscular tissue becomes involved. Severe pains in the chest and epigastrium have also an influence in determining the degree of dyspnœa, these together with the pressure of the peri-cardial effusion upon the heart are usually quite sufficient to establish the cyanotic and collapsed condition so frequently observed in these cases and

* Virchow, Arch. vol. vi, 1886.

† Hand-book Disease of Heart.

‡Ziemssen, vol. vi, p. 555.

§Virchow, Gessan abhand, 1856.

which were the marked features of the one under consideration, in its early development.

We feel ourselves justified then in claiming the first lesion of 1873 to have been a circumscribed peri-carditis with a possible implication in a limited degree of the muscular tissue of the heart.

Upon a careful examination of the specimen before you, it will be seen that the endo-cardial surface of the calcified ventricular wall is smooth and polished, whilst the myocardium is the chief seat of the calcific deposit which further tends to substantiate the view that the disability of 1873 started as a peri-carditis, but did not seriously implicate the myo and endo-cardii until the recurrence of 1886, for it is hardly to be regarded as possible that the patho-genetic conditions of the latter date, even though greatly modified in degree, as compared with those observed in the specimen, could have existed thirteen years without any subjective symptoms whatever.

Another interesting question has reference to the etiology of the embolic infarction of 1886. The tendinous spot, visible on the superior mitral fold, may perhaps suggest to some of you the possibility of there having existed in the early stage of that lesion another of like pathological origin but of a much more limited attachment, which by virtue of the unequal and irregular ventricular blood currents, became detached with the results noted in the previous history. This view, however, would not be at all consistent with the generally understood genesis of these growths, for, according to Baillie,* Soemmering and others they are not of pathological origin. According to Bizot† in one hundred and fifty-six cases of deaths from cardiac diseases these spots were found but forty-five times, chiefly on the parietal layer of the pericardium yet Bauer states they do occur at the origin of the great vessels without specifying a possible selection of the endo-cardial valves.

It is further stated by the same writer that they are of no clinical importance whatever, being accompanied by no functional disturbance and unrecognizable by any symptoms during life.

Now it must be understood that this view has special reference to their localization upon the parietal serous covering of the heart. In this case we find it on the edge of an endo-cardial fold of the mitral at a point particularly calculated to render its detachment of easy accomplishment in its early plastic state.

Whilst, therefore, it is by no means certain that the radial infarction in this case was etiologically dependent upon this particular endocardial source, it has hardly been removed from the range of possibility by any authority thus far consulted.

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* Bauer Zeimssen vol. vi. p. 550–551.

† Men de la Soc. Med. de Observe de Paris, Jour. I. 1836, p. 347.

There is needed however, a no more reasonable hypothesis, assuming the myocardial lesion existant at this period to have been a sequence of the secondary peri-carditis of 1873, than that the left ventricular peri-cardium was at this time attached by circumscribed adhesions to the left pleura its contractile power being not only restricted by this, but likewise by the gradual degeneration of the cardiac muscular tissue as well, the blood current through the left ventricle being churned as it were, by the irregular and imperfect contraction of its normal muscular fibres upon the dense and non-contractile myocardial wall, with the resultant formation of a small coagulum and its subsequent localization through the innominata right sub clavium and brachial, at the seat of the radial infarction. At this point the inquiry forces itself upon us as to the possible agency of sepsis in the etiology of cardiac embolism as illustrated in the case before us. One leading German authority* declares that all forms of endo-carditis yield micro-organisms, but he, at the same time regards it as essential to their development that there should have been some pre-existing valvular lesion. Another explorer† in this field of pathology, on the contrary, has determined by a series of experiments, that chronic vegetative endo-carditis may exist without it being possible to discover any bacteria, and his conclusions as arrived at are, "that while the spheroidal type of bacteria are present in a certain proportion of cases, yet many others, followed by thrombi and multiple infarctions, occur in which no specific bacteria can be found."

It is clear then, so far as our present knowledge extends, that nothing positive can be affirmed regarding sepsis as an etiological factor in the extraordinary cell metamorphosis observed in the specimen presented for your examination here to-day.

In conclusion, the etiology of the tissue-metamorphosis of the myocardium, which has resulted in the remarkable transformation of the circumscribed muscularparietes of the left ventricle, in this case involves a question of more than ordinary scientific interest. The hypothesis would seem to be a reasonable one, that its starting point in the earlier attack, was the visceral layer of the pericardium, the myocardium having been involved in a slight degree only, the lesion, in the course of the year's disability becoming chronic and finally terminating in resolution with compensation and measurably impaired cardiac contractibility under which a fair degree of health was enjoyed for thirteen years during the interval between June 1873 and April 1886.

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*Rosenbach (Deut. Med. Woch.)

†Prudden, N. Y. Jour. Med.

At the latter date the etiological factor must have been a sub-acute* endo-carditis with possibly circumscribed pericarditis, subsequently implicating the interstitial and connective tissue of the myocardium.

That the endo-cardium must have been involved early in the second attack, the blood clot and radial infarction would seem to have established positively, but it could only have been in the latter stages of that attack, that the circumscribed myocardium became wholly destroyed by tissue metamorphosis with the resultant thin bony septum seen in the specimen.

The presentation of this exceptionally interesting case, the first of the kind in my thirty-five years professional experience, would seem, in view of its infrequent occurrence, and the rare complication of a right radial infarction, to have justified, to a degree at least, the limited demand made upon your time and patience, but hardly warrants a more extended range through its bibliographical field than has been absolutely essential to an intelligent presentation of the facts involved. This field has been, and is being, carefully and studiously explored and notwithstanding recent advancement in our knowledge of this specialty has been rapid, much remains yet to be achieved, and from my stand-point of a student rather than an explorer, I am inclined to the belief that our future achievements in this branch of medical inquiry are to accrue from persistent post-mortem study and histological and biological research.

ARTICLE III.

Electricity in Gynæcology.

Was the title of a paper read at the recent meeting of the Alabama Medical Association, by Dr. W. E. B. Davis, of Birmingham, Ala.

He believes that ultra-enthusiasm has led to frequent failure in the use of this remedy, but says there should be no question as to its importance as a therapeutic agent in gynæcological practice when such men as Apostoli, the Keiths, Engelman and other competent observers, who have had experience in its application, report most satisfactory results. His apparatus consists of a Gaiffe faradic battery, the bi-polar uterine and vaginal excitor of Apostoli, a fifty-cell galvanic battery, constructed by Woodruff & Harris, of Birmingham, under his supervision, the cells of which are of the Law telephone pattern; a portable Waite & Bartlett galvanic battery, Gaiffe's galvanometer, Massey's current controller, the abdominal electrodes of Apostoli and of Martin, platinum sounds, steel needles, and metal electrodes to be used with absorbent cotton.

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* Luken, Die Pathol, Neubeldeugen Perocord.

He advises the use of the current of the Edison circuit, direct from the dynamo when it can be had, and thereby avoid the annoyances and inconveniences of a battery. Portable batteries have proved very disappointing for the administration of high intensities, and his work has been confined principally to office practice. Great stress is laid on the importance of the application of the faradic current in sub-involution of the uterus, and every woman who has had an abortion or is confined at full term is placed on ergot, and should there be incomplete involution, at the expiration of six weeks he begins at once the use of the faradic current, with the bi-polar, intra-uterine excitor of Apostoli, and repeats the application every second or third day until the organ has returned to its normal size, "which can always be counted on with mathematical certainty." He does not recommend the use of the current immediately after every abortion or delivery, as practiced by Apostoli, since this treatment could not or would not be afforded except by a very small class, unless it were certain that the uterus would not return to its proper size. For this reason ergot is prescribed in every case, as stated, since it acts very much as faradization on the smooth, non-striated muscular fibre of the uterus, although not by any means so prompt, energetic and reliable. All cases are examined at the expiration of six weeks to ascertain whether involution has been completed.

Cases are reported to show the value of the faradic current in sub-involution of the uterus, and to illustrate its efficacy in displacements due to the enlarged hyperæmic condition of the organ following parturition. The current of tension—the current from the long, fine wire—has proven a valuable agent for the relief of pain, and cases showing permanent relief were quoted.

To illustrate the power of the faradic current on the perineum, vagina and uterine ligaments in prolapsus of the uterus, and also the effects of the current in relieving pain, the following case was reported:

Mrs. P., æt. thirty-five years, had last child four years ago, since which time she had suffered almost all the time from pelvic pains, insomnia and very marked nervous symptoms. The pain was so severe at her menstrual periods that she had been advised by her physician to have her ovaries removed, and it was for this purpose that he was consulted. Her uterus was normal in size and prolapsed to a marked degree, which was due to its relaxed supports. The bi-polar vaginal excitor, with strong current, was used every second or third day for two weeks, and at the first period she did not know when the flow appeared. In eight weeks her uterus remained in proper position, she was relieved of insomnia and her nervous symptoms improved.

Two months after the treatment was stopped she became pregnant.

Both the currents of quantity and tension were used at each consultation in this case; the former for the relaxed muscle, the latter for pain. The patient always felt better after each *seance.*

The currents of quantity and tension have been used with very satisfactory results, as indicated by Apostoli, but he has begun to use the current of tension not only for pain, but to stimulate relaxed and enfeebled muscle fibre. The current of tension is borne better by the patient, and he has been unable to recognize the superior results of the current of quantity on muscle over the current of tension. In displacements of the uterus he supports the organ with wool tampons, and does not object to any form of pessary, properly fitted, in connection with the treatment by electricity. He believes that proper support of the organ, combined with the proper application of electricity, to be the most rational treatment for this condition.

When the uterus is enlarged, not from sub-involution, but *hyperplasia*, the continuous current is indicated. All cases of chronic endometritis are amenable to galvanism*—the positive current when there is much leucorrhœa or profuse menstruation, and the negative in other cases. From seventy-five to one hundred and fifty milliamperes are used twice weekly for five minutes at a time. The sound is usually introduced through a bi-valve speculum, and the handle allowed to rest on a large wad of absorbent cotton, which prevents injury to the endometrium. This is preferred because it permits of more thorough antisepsis, and allows the physician to rest his hand during the operation. He does not say that electricity will do away entirely with such surgical procedures as shortening the round ligaments—Alexander's operation—or attaching the cornua of the organ to the abdominal wall, or the narrowing of the vagina by the many methods at present in vogue, but insists that many cases can be relieved by this method of treatment which would otherwise be condemned to the knife.

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* Apostoli: Chronic Metritis, etc.

Chronic inflammatory exudations in the pelvis should be punctured from once to twice a week, and from one hundred to one hundred and fifty milliamperes of the negative current used. The faradic current is an admirable remedy for the so-called chronic pelvic inflammations—thickening of one or both broad ligaments from the collection of blood in the distended veins when the uterus is displaced.* Of course, the lacerated cervix which usually causes this condition should be repaired before the administration of electricity is begun.

The local application of the faradic current is capable of relieving many cases of amenorrhœa due to atrophy of the uterus. In menorrhagia due to relaxation of muscle, to engorgement, when patient menstruates from eight to nine days, after a few applications the menstrual periods would only last from four to five days. The positive galvanic current is the remedy indicated for hæmorrhage due to a disease of the endometrium, and is the current usually indicated for hæmorrhage. Women often become pregnant soon after being treated by electricity, and it is unquestionably a valuable remedy for sterility due to nervous causes, so ably described by Dr. Campbell.

Neuralgic dysmenorrhœa and dysmenorrhœa in women of a hysterical temperament—in whom the slightest excitement or worry will cause to suffer greatly; those cases where there is no apparent pathological lesion—he has succeeded, as with no other remedy, by the application of the current of tension or by the mild positive galvanic current.

The negative current is indicated when the pain is due to mechanical causes in the cervical canal, and when there are inflammatory deposits around the ovaries, etc.

He reports a case in which he had removed the ovaries and tubes when there were inflammatory deposits around the tubes and ovaries, and regretted that he had not used galvanism, as the operation had not benefited the patient. He does not think that galvanism can take the place of the removal of the ovaries and tubes, but says each has its special field, and should electricity fail there is no harm done, and the operation can still be resorted to.

While he has had no experience with electricity in extra-uterine pregnancy, from a study of the actions of the agent and the results in the hands of others, thinks there can be no doubt but what it should be used in the early stages of this condition, and should there be a mistake in diagnosis there could be no harm done, as this is the remedy for the pathological processes which are liable to be mistaken for extra-uterine gestation. When the pregnancy has lasted for more than three months, and when it can be positively diagnosed, it is a question in his mind whether laparotomy should not be resorted to at once.

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* Hardon: Transactions S. S. & G. Ass'n.

He said the subject which had concerned the profession most in connection with the use of electricity was *the treatment of fibroid tumors*, and that the results of the treatment in the hands of Apostoli, the Keiths, Englemann, Lapthorn, Smith and others, had demonstrated that this is *the treatment* for fibroid tumors which "offers probabilities of healthy retrogate metamorphosis."—*Engelmann.*

He had followed Apostoli's instructions in this class of neoplasm and believed that the majority of cases could be symptomically cured. Certainly Apostoli's treatment should be tried before resorting to hysterectomy.

ARTICLE IV.

A Case of Retention of a Foreign Body in the Air Passages for Seven Months.

By William R. White, M.D., Providence, R. I.

Case II. of the series mentioned by Dr. James R. Leaming in his interesting and valuable paper on Acoustics of the Human Chest in Physical Diagnosis, published in the *New York Medical Journal* of March 23, 1889, reminds me of a case that came under my observation several years ago. In Dr. Leaming's case a man accidentally inhaled a head of timothy. "On the third day he coughed and vomited up a large amount of muco-pus and in it was the denuded stalk of the timothy head, after which there was cavernous respiration." Just how long the patient survived is not stated in this brief report, but "the autopsy showed abscesses in both lungs and extensive interpleural adhesions."

This case and the one to be described are identical in their causation, but in clinical history and ultimate result are so unlike that the one adds greatly to the interest of the other.

The following case occurred in the practice of Dr. George Spafford of Cavendish, Windsor Co., Vermont, by whose courtesy the writer then sojourning in the same town, was allowed to see the patient frequently during his acute illness, and was informed of his subsequent conditions.

Previous to August 3, 1879, Robert A. was in perfect health. An American, æt 18 years, weight 180 lbs., employed on his father's farm, habits excellent, of fine muscular development and fond of gymnastic exercise, he was, physically, much above the average. On the date mentioned he was handling a spirited horse, at the same time carelessly holding a head of herd's grass or timothy by its stalk, between his teeth. Being startled by a sudden plunge on the part of the horse, he gasped and apparently drew the head of grass down through the larynx. A paroxysm of coughing and choking ensued but all attempts at expelling the foreign body were in vain. The cough and laryngeal irritation gradually subsided and so little discomfort was experienced that the young man resumed his work in the hay-field the next day, and continued it for more than *two weeks.* He coughed more or less, however, and was very anxious about himself. Finally he walked five miles to consult his physician, feeling sure the grass was still lodged somewhere in his air passages.

Dr. Spafford, from the history of the accident having occurred more than a fortnight previous, and finding on brief examination no abnormal physical signs about the chest, hardly believed the foreign body had descended below the larynx, but suspected it had been unconsciously expelled from the pharynx and mouth by the first fit of coughing,

On the evening of that same day new and severe symptoms developed initiating a long and dangerous illness. There was first a severe rigor, then fever, rapid respiration, severe pain in right side of chest, with a most painful and harassing cough. Dullness on percussion and moist rales were present in the right lower half of the chest. No marked change in the clinical aspect of the case occurred for about three weeks when Dr. Daniel Campbell, of Saxton's River, Vermont, was called in consultation. The percussion note over the right lower and a portion of the middle lobe was now flat, with respiratory sounds absent. The cough was constant and most distressing; expectoration, scanty at first, had now become copious, the sputa being mucus, pus and blood, yellow or greenish in color and very offensive. Small shreds of greenish brown tissue had recently begun to appear in the sputa, which were thought to be portions of the grass. The pyrexia had increased, the temperature reaching 103° or 104° every afternoon. The patient was rapidly failing in weight and strength.

The diagnosis seemed clear, viz.: pulmonary abscess, with the agent of causation still in its dangerous position. As the patient was evidently suffering from pyæmia and failing steadily, with little strength remaining, the prognosis was regarded as unfavorable. It was decided to continue the sedative, antiseptic and supporting treatment that had been constantly employed and await a crisis in the case. This occurred, *apparently*, three days later when, after a prolonged attack of violent coughing, there was a sudden gush of most offensive sputa, so copious indeed, as to nearly cause death by strangulation in the patient's weakened condition. The matter expelled, estimated to be a pint in quantity, consisted of pus and broken down tissue, but the free hæmorrhage, which had been greatly dreaded, fortunately did not occur. The head of grass or its remnants were anxiously sought for but not found, greatly to the disappointment of physician and patient.

Henceforward all the symptoms of the case rapidly improved, and, as a good many small bits of grassy material had been raised at different times, it was hoped no more remained. The marked improvement in the patient's condition strengthened this hope as the weeks went on, for fever and cough abated, appetite and strength returned, and by the middle of October, or about nine weeks from the date of the first rigor, he was riding out and had gained a good deal in weight. The physical signs present at this stage of the case the writer is not able to give, except that the percussion note had become resonant over the area before named, soon after the evacuation of the pus cavity. There was now no pain in the chest and no dyspnœa. The sputa were scanty and not offensive. There was still some cough and the pulse and temperature were above normal.

The history of the case for the next four months must be briefly told. The patient seemed to gain in many respects. He looked and felt pretty well, and went out of doors when the Vermont winter weather was not too severe. Still there was a troublesome cough with muco-purulent sputa, and several attacks of hæmoptysis, enough to cause and maintain a feeling of anxiety.

On the 4th of March, 1880, just seven months after the accident occurred, the patient coughed almost incessantly for several hours when the head of grass was expectorated, measuring two and one-eigth inches in length and nearly as perfect in shape and structure as when it was inhaled. The bits and shreds previously expelled were doubtless from the stalk.

The cough and hæmorrhages at once ceased and complete recovery followed, the patient being alive and well to-day.

The writer has no comments to offer regarding this case. Its salient points of interest speak for themselves and the possibilities in the way of treatment in a similar case, in view of the progress of medical and surgical science in the last ten years, must be considered by each reader for himself. While Robert A. survived his seven months of danger and fully recovered, another man of less vigor and endurance might succumb early to the force of like unfavorable conditions.

SELECTIONS.

THE PLACE OF MEDICINE AMONG THE SCIENCES.

It is often alleged as a reproach against medicine that, though an art, it is hardly a science, or at least not an exact science. This allegation has that mixture of a small amount of truth with a large amount of error which gives so many popular ideas their plausibility and their mischievous tendency. It is quite true that medicine is not scientific in the sense that algebra and geometry are scientific. Their conclusions are absolute and certain, and if there be error it is the fault of the calculator, and not of his methods. But we are too apt to regard the pure mathematical sciences as the only true sciences, forgetting that physics and biology are also sciences, and that they cannot claim mathematical accuracy and certainty in their conclusions. In truth, exactness, which many vaguely regard as the essential characteristic of all true sciences, is not found without some qualification outside the range of pure mathematics. The reason is obvious. Pure mathematics deals either, as in algebra, with arbitrary symbols to which we are at liberty to assign a perfectly unvarying significance, and in the handling of which no error need arise; or, as in geometry, with a few elementary principles which admit of rigid proof, and which constitute the foundation of all the subsequent processes. Outside this limited range perfect exactness is not attainable, because the data of our calculations become more and more complex, and conclusions in proportion more and more approximate. Take mechanics, for example—the science that makes the nearest approach to pure mathematics. What can be simpler or more precise than the three laws of motion? Yet the physicist tells us that to calculate the precise path of three bodies gravitating towards each other exceeds his powers. It would be a very ignorant deduction to infer from such an admission that mechanics was unscientific, or that a large proportion of its conclusions did not admit of the most precise statement. Or take astronomy—that science which, by the vastness of its range and the unerring precision of many of its predictions, compels our confidence and admiration perhaps more than any other; and we find that, while the astronomer will predict fifty years before the event the exact moment when the first shadow of an approaching eclipse will be cast upon the orb of the sun or moon, he is obliged to admit that in some of his calculations—those regarding the paths of some of the comets, for example—precision is not yet attainable.

We shall find, therefore, if we take a wide survey of the sciences, that they present varying degrees of exactness, that pure mathematics alone gives us perfect precision, and that even in sciences so closely allied to them as mechanics and astronomy approximation is sometimes all that is to be expected. When we come to the biological sciences, we find a new and perplexing factor—viz., life—present in all our calculations and introducing new complexities. We cannot yet give any definition satisfactory in all respects of this new factor, and it may be doubted if we shall ever fully understand it. We do not, therefore, give up in despair of exactitude those departments of knowledge which deal with life. On the contrary, we see here as elsewhere the reign of law, and we aim at a fuller comprehension of it, while frankly admitting that the principles of plant or animal life do not permit conclusions comparable in precision to those of algebra or geometry.

This is, we apprehend, the proper point of view from which to determine the claims of medicine to be reckoned a science. We find its problems the most complex of all, for not only does it deal with life, but with life disordered by disease; yet we confidentially vindicate its claims to be reckoned a science on the principle of Herbert Spencer, that "where there is *some* prevision there is *some* science." That there is some—nay, a large—prevision in medicine no one will venture to deny. Prognosis is probably the most difficult department of practice, but no one will dispute that it admits of great perfection in proportion to the natural aptitude and the experience of the physician. We can say of some diseases, such as varicella or herbes zoster, that they will have a certain defined course and end in recovery. On the other hand, tetanus and hydrophobia afford us types of diseases that run a short and almost certainly fatal course. A third group, the specific fevers, pneumonia, etc., present a defined course, an uncertain issue, but definite dangers often occurring at definite periods, and admitting more or less of prevision when regard is had to the age, constitution, and previous habits of the individual, and the type of the attack. Then we have those diseases which are chronic in their course, but tend sooner or later to a fatal termination, such as tuberculosis, emphysema, and valvulitis. It would be tedious to illustrate further principles that the least reflection can make obvious to any practitioner of considerable experience. It is obvious that medicine admits of much prevision, even on general principles, and when we add the additional capacity which comes of ability and experience we get a prevision often of the highest order. It is true it deals for the most part only with probabilities, but it shares this disadvantage with some of the widest and most fruitful fields of science.

We cannot doubt that the present moderate amount of exactness attainable in medicine is destined to undergo a large increase. This may be expected to come in two ways—namely, through an increased knowledge of disease, and through a better understanding of physiology, and of that vague something which we call "constitution" or "diathesis." The study of this last factor is at present suffering from an opprobrium not wholly undeserved. In former ages men drew conclusions from such slender data, and dogmatized so confidently about the sanguine, the phlegmatic, the bilious, and the nervous "constitutions," that the present generation is inclined to doubt whether anything useful can be precisely formulated on this subject. Yet most observers can hardly resist the conviction that a modicum of truth lies concealed under this mountain of error. On the scientific importance of the most rigid investigations of the nature of disease all are agreed, and the increasing attention given to questions of etiology is a very satisfactory feature of the present time.

Medicine will probably never become mathematical in the accuracy of its results; it may only very slowly approach the certainty now attending the investigations of the physical philosophers, but we cannot doubt that it is destined more and more to justify its claim to a true place among the sciences.—*Lancet.*

CÆSAREAN SECTION *vs.* EMBRYOTOMY. By P. J. Murphy, M.D., Surgeon-in-Charge of the Columbia Hospital for Women, Washington, D. C.

To bring before the medical profession a question so threadbare, so much discussed, and concerning which there is such a diversity of opinion, may be presumptious, especially when that question has vexed the minds of the most distinguished obstetricians of this and other ages, reaching as far back as the history of midwifery itself. The observations of the great masters of obstetrical study in its beginning, have given us views regarding the treatment of certain abnormal conditions occurring in parturition, where either the life of the mother is at stake, the life of her unborn babe, or both. We cannot shut our eyes to the fact that these lessons are by no means of trivial importance, and when learned aright may serve to guide us in our search after truth, the foundation upon which is based all knowledge worth the knowing. Unfortunately, we are, for the most part, creatures of circumstance, and, as in religion, so in scientific research are we moulded after a certain fashion, according to the model of our prototype. Just as one man is blind to the horror of killing an unborn babe, or putting out life in the earlier stages of development of the human embryo, or thinks it a great crime to be absent from church on the Sabbath-day, another, *per contra*, who perchance looks at religion as a chimera of the imagination, deems it criminal under any circumstance to close a life already begun. But we shall never reach a unanimity of opinion until these personal factors are eliminated, and, with the aim of saving life and relieving suffering, we view the established facts in the colorless light of science.

In endeavoring to do this we naturally turn first to statistics. It would be a truism to state that, since the advent of Listerism, the statistics of abdominal surgery have been revolutionized to such an extent that pre-antiseptic data, if used at all, must be used with great caution. It will not be out of place, however, to look for a moment at the older figures, when the mortality of both operations was much greater than at present, and note the opinions of a few older writers.

Churchill has collected the greatest number of cases, and his tables have been regarded as the most reliable. He gives the maternal mortality of craniotomy as 1 in 5, and of Cæsarean section as 1 in 2⅓.

Bedford, commenting upon these figures, says: "You should note the important fact that these tables give only the immediate deaths in the proportion of 1 to 5 of the women who have been subjected to the hazards of craniotomy; not one word is said of the dreadful lacerations and destruction of the soft parts, sometimes terminating fatally, involving too frequently the unhappy sufferer in distress and anguish which would cause her to invoke death as a blessing.*

As far back as 1835 to 1839, Halmagrand reported 15 cases of Cæsarean section, done early, with 12 mothers and 13 children saved.

Klein gives 116 cases, of which 90 were successful.†

Dr. John Hall 112 cases with 90 successes.‡

Mr. Simon, in 1749, reported to the Academy of Surgery 64 successful cases, more than half of which had been performed on the same thirteen women, some of which were operated on two, three, four, five, six, and even seven times.

With these facts in view see how different are the opinions expressed:

Dr. Osborn§ says: "The valuable life of the mother should never be exposed to *absolute destruction* by the Cæsarean operation for the certain safety of the child."

Mauriceau‖ writes: "The Cæsarean section should never be performed on the living woman; it is an inhuman, barbarous and cruel operation."

Baudelocque¶ holds: "To *mutilate a living child* in order to avoid the Cæsarean section, is the offspring of ignorance and inhumanity; nothing can excuse the practitioner who will have recourse to the perforator or crotchet, without *first being certain the child is dead.*"

Gordien** says: "It is with good reason that prudent accoucheurs,

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* Principles and Practice of Obstetrics, p. 630.

† Loder's Journal, vol. ii, p. 759.

‡ Obseıvations on Cæsarean Section, Manchester, 1798, p. 292.

§ Essays on the Practice of Midwifery, p. 225.

‖ Traité des Maladies des Femmes Grasses, vol. i, p. 352.

¶ L'art d'accouchement, p. 103.

** Traité complete d'accouchements, p. 103.

in view of the fatal results of embryotomy, prefer the Cæsarean operation."

Weidmann* recommends the Cæsarean section in every case of pelvic deformity in which a living child cannot be delivered by other means.

England's greatest obstetrician, Smellie,† speaks thus: "When a woman cannot be delivered by any of the methods recommended in preternatural labors on account of narrowness or distortion of the pelvis, etc., in such emergencies, if the woman is strong and of good habit, the Cæsarean operation is certainly advisable and ought to be performed."

Many more authorities might be quoted, advocating either side of the question, but I have given enough to show the great discrepancy existing, and the language of these quotations shows for itself that they are rather passionate utterances than calm conclusions.

Bedford was one of the earliest writers who attempted to reach a just and unbiased conclusion on this subject. Many of his arguments are forcible and in favor of the Cæsarean section, and after viewing the probable number of lives saved in a given number of cases, taking Churchill's figures, he ‡ says: "In my translation of Chailly's Midwifery (1844), I emphatically expressed my views upon the question of craniotomy in the following unequivocal language: 'In truth, it needs some nerve, and for a man of high moral feeling, much evidence of the necessity of the operation, before he can bring himself to the perpetration of an act which requires for his own peace of mind the fullest justification. He who would wantonly thrust an instrument of death into the brain of a living fœtus would not scruple under the mantle of night to use the stiletto of the assassin, and yet how frequently has the child been recklessly torn piecemeal from its mother's womb, and its fragments held up to the contemplation of the astonished and ignorant spectators as testimony undoubted of the operator's skill. Oh! could the grave speak, how eloquent, how damning to the character of those who speculate in human life, would be its revelations!' Such, gentlemen, was my language in 1844; and now in 1861, with a more matured judgment and a riper experience, I am, if possible, more strengthened in my conviction. Therefore, in the fullness of my faith I have no hesitation in saying that, if the *child be alive*, the woman at the completion of her pregnancy, and it be made manifest that the maternal passages are so contracted as to render it physically impossible that a living child can be extracted per via naturales, I should between the two resources — craniotomy and the Cæsarean section—not hesitate to decide in favor of the latter"

And when we look at the number of lives saved in 100 cases of Cæsarean section as compared with 100 cases of craniotomy, even with the older statistics of Churchill as a basis for our figures, 128 saved in 100 Cæsarean operations and only 80 in 100 craniotomies, with a large number of the 80 crippled for life, surely we must admit that Bedford has good reasons for his conclusions.

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* Comparatio inter sect. Cæsar, et dissectionem, cartilag, et ligament pelv. in partu ab pelv. august impossib.

† Midwifery, vol. i, p. 239.

‡ Principles and Practice of Obstetrics, p. 635.

But if there was reason for preferring the Cæsarean operation in pre-antiseptic times, how much greater reason is there now for giving it the preference when the mortality has been reduced to 8 or 10 per cent., and these are the figures that Lusk gives for the Sänger operation in favorable cases.* And in the same article he says: " On general principles it can be affirmed that if the anterior conjugate is two and one-half inches or less craniotomy entails as much risk as Cæsarean section, unless the transverse diameter is favorable. With pelves varying from two and one-third to three and one-third there is still great difference of opinion as to the proper course to adopt." And well there may be if we leave the lives of the children entirely out of sight.

The statistics of the first one hundred cases of Sanger's operation—fifty in Europe and fifty in America—are given by Dr. Robt. P. Harris, of Philadelphia,† as follows:

UNITED STATES.

Women saved	35	31 operations.
Children extracted alive	46	
Women lost	15	
Children extracted dead	4	

CONTINENT OF EUROPE.

Women saved	40	31 operations.
Children extracted alive	48	
Children extracted dead	2	
Women lost	10	

Here we have 75 women and 94 children saved, a total of 169 lives, whereas, if craniotomy had been resorted to, the result would have probably been 90 women saved, possibly 95, and one-third of these rendered miserable for life or forced to undergo subsequent operations of a more or less serious character for the repair of damage done. When we see daily hundreds of women coming to gynæcologists with frightful lacerations following the simple use of forceps in normal pelves, how can we avoid the conclusion that nearly half the women subjected to the operation of craniotomy, cephalotripsy, or embryotomy by men no more skilful, *must* be seriously injured, many of them beyond repair.

The most favorable statistics, I think, that have ever been given for craniotomy, even in a limited number of cases, is 3 per cent. in 100 cases reported by Gottschalk.‡ Credé gives a much higher mortality, and it is altogether improbable that the average mortality (maternal) has ever been less than 10 per cent. or will ever be less than 7.1

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* N. Y. Med. Jour, Dec, 22, 1888.

† Annals of Universal Med. Sciences, 1888, p. 215.

‡ Annals of Universal Med. Science, p. 218.

per cent. which is the maternal mortality given by Credé* for Cæsarean section done by skilful operators.

It has been justly objected that we should not place the uncertain life of the child on a par with the valuable life of the mother, but no thinking man can refuse to give some value to the life of the unborn child. Just how great this relative value is to be, is a point difficult to decide; but as at least one-third of all children born reach maturity, including those reared in cities under most unfavorable circumstances, we will certainly do injustice to the children if we give their lives less than one-third the value we attach to the life of the mother. And when we find the results of craniotomy and Cæsarean section so nearly balanced, when we consider the welfare of the mother alone, *surely* a relative valuation of one-third or even one-tenth to the lives of the children must turn the scale in favor of the Cæsarean operation and make it the operation of election where it is possible to be done with hope of success.

When this result—this conclusion—is reached by the mass of medical men—and that time is surely coming—we shall begin to get better results for the following reasons.

1st. The necessity of the operation being recognized, it will oftener be done at the proper time—before rude efforts have been made to deliver in other ways. Proper preparations will be made and skilful operators procured.

2d. The operation, though much improved of late, so much as to render it, even in its present state, preferable to craniotomy, is still not perfect, and I have no doubt that the dangers will yet be greatly lessened.

The greatest obstacle to the operation, or what seems to be so considered by some, is the indisputable fact that the surgeon is not called in many cases until labor has progressed some time, often not until the woman is almost *in extremis*. Under such circumstances it has been said that Cæsarean section is out of the question. But is this so? With an exhausted and feeble woman is not the danger of craniotomy increased as much, if not more than that of the cutting operation? Under the influence of ether cannot a comparatively rapid cutting operation be done with less shock than a tedious dragging of a mutilated fœtus through a contracted pelvis—an operation intrinsically nearly or quite as dangerous, and it seems to me not to be thought of with moribund woman. Again, if we give the mother's life the greater value because that of the fœtus is uncertain, should we not reverse the rule when the mother's life has become greatly jeopardized and give the child a chance when its life has become a more valuable factor than the mother's, through a sinking of her valuation.

I leave these questions for each to answer for himself, believing that when they are looked at in an unbiassed way but one conclusion can be reached.

In an experience of seventeen years spent in hospital and private practice, I have never had but one case of dystocia on part of the mother which called for interference, and in which instance, on account of a narrow conjugate, I perform craniotomy on a dead child owing to protracted labor. If I could go back now, with the light that has been given me since, I have no doubt that the mother and child could have been saved. The mother, after weeks of suffering, fortunately recovered, owing to her rugged constitution, and not to any particular skill on part of the operator.

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* Op. cit. p. 218.

Mr. Lawson Tait,* amongst the foremost of living operators in abdominal surgery, reports a second series of 1000 consecutive cases of abdominal section showing a diminution ot the mortality from nine and two-tenths in the first series to five and three-tenth in the second. He predicts that "The operation will revolutionize the obstetric art, and that in two years we shall hear no more of craniotomy (save for hydrocephalus and evisceration), for this new method will save more lives than these proceedings do, and is far easier of performance. It is the easiest operation in abdominal surgery, and every country practitioner ought to be able and always prepared to perform it."

What we want is to have the Cæsarean operation established in its proper place—the medical profession agree as to it utility, and we shall have, I firmly believe, not only hundreds of children saved, but more mothers than at the present day, and certainly much misery prevented, such as now so frequently follows the various operations of embryotomy. Let this horrible butchery of infants and mutilation of women cease, and let us endeavor to save life and suffering, which is the true aim of our noble profession, and let us above all remember "Thou shalt not kill."

In the preparation of this paper I beg to acknowledge my indebtedness to Drs. Carr and Morgan, of the Hospital Staff.—*Obstetric Gazette.*

A New Treatment of Diphtheria. By Dr. E. Gaucher.*

In proposing a new treatment of diphtheria, one runs quite a risk of meeting nothing but incredulity. Therefore it was not till after much hesitation that I decided to publish this communication; perhaps I should not have undertaken the publication, had I not been after a manner invited so to do by the excellent review which my friend, Dr. Le Gendre, has caused to appear in the *Archives of Laryngology.* Dr. Le Gendre has made known my method of treatment along with two cases of whose management and cure he was witness. I desire to complete the data contained in the article cited, indicate the principle points of the therapeutic method which thus far has given me almost unvarying success, and allude to the theoretical notions of which this treatment is only the application.

We find it everywhere asserted that diphtheria is a general infectious disease; many authorities even affirm that it is a general disease at first. This view was prevalent a few years ago; I was taught it by Archambault at the *Hôpital des Enfants Malades* when I was interne in 1879. Now there is no doubt as to the infectious nature of diphtheria; but that this infection is *general at first*, I do not believe. It is first local, then general. The infection diffuses itself very rapidly, I admit; but, after all, diphtheria, grave or benign, is not a general infection, but a *generalized infection.*

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* International Journal of Surgery, vol. ii. p. 69. March, 1889.

I do not here provoke a quarrel of words. There is a great difference between these two ways of representing the diphtheritic infection; there is a greater difference still between the therapeutic conclusions which force themselves upon us in connection with the two views. If diphtheria is a general disease at first, it is evident that all the efforts which we may direct against the local disease will have little or no efficacy, and that it is the general state which demands especial attention, and this from the very outset. What good to destroy the false membranes if there exists an internal cause which brings about their speedy reproduction; if the angina is the only result and manifestation of the infection?

But if, on the contrary, the angina be the *primitive accident* of the malady—if it be the source of the infection, instead of being the consequence—it is this which we should treat with the greatest energy, for, in destroying the false membranes, we attack the very cause of the secondary infection.

In my opinion, the second theory is the correct one, and these are the grounds on which I base my view:

First—It is a fact, that we often witness benign attacks of diphtheria without general infection, or with tardy infection, and diphtheritic patches localized in the throat during the whole or during the greater part of their duration.

I find another argument in the primary seat of the pseudo-membranous exudation, which may be other than the pharynx. It is not always in the throat that the diphtheritic germ finds lodgment. Ordinarily, indeed, diphtheria begins in the throat because this common vestibule of the respiratory and digestive passages is the most exposed to germs coming from the atmosphere; but there are primary diphtheritic stomatites; there are groups at the onset; there are diphtheritic bronchites, with consecutive croup and angina; there are primary cutaneous diphtherias. If the skin is denuded; if the mucous membranes of the mouth, of the larynx or bronchi, are inflamed or irritated; it is there that the infectious germ may implant itself and undergo development first. There is no dispute relative to diphtheritic stomatitis, to true croup at the start, or to cutaneous diphtheria. As for primary diphtheritic bronchitis, this form also exists; I have observed a striking instance, which in a few words I will relate:

A large girl, æt. 12 years,† convalescing from typhoid fever, was attacked with bronchitis, fever, and a grave condition of prostration. Three or four days afterwards the respiration became embarrassed and attacks of suffocation appeared. Presently the existence of croup was evident; on looking into the throat, a false membrane was seen covering one of the tonsils. The accessions of suffocation were repeated, necessitating the operation of tracheotomy. The child eventually got well, although new false membranes formed in the throat after the operation.

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* Physician to the Hospitals, Paris, France.

† Observation taken in 1879, at the *Hôpital des Enfants Malades*, service of Archambault.

Is it not plain that in this case it was by the bronchi that the diphtheria commenced—by the bronchi, perhaps even then inflamed, or at least rendered more impressible as the result of the typhoid fever (typhoid bronchitis)?

There is, then, in diphtheria, a local accident which ushers in the general infection; in other words, the systemic poisoning results from the presence and sojourn of false membranes in the throat or in some other part of the mucous or cutaneous surface. In fact, the angina is not the manifestation of the diphtheritic infection, but the starting point of this infection.

These views, which I had long ago formulated, have received of late striking confirmation in the carefully conducted experiments of Roux and Yersin, which go to show that, prior to any constitutional infection, a poison is elaborated by the diphtheritic microbe in the interstices of the false membranes; this poison, which is of the nature of a ptomaine, is soluble, is absorbed into the general circulation, and causes the constitutional symptoms.*

If you are convinced by these arguments, and if you admit, with me, that the false membrane is the source of the infection of the organism, you will see the importance of early and complete destruction of these diphtheritic membranes in the pharynx, or wherever may be accessible. It has been objected to this mode of treatment that the ablation of the false membranes denuded the mucosa, removes the epithelium, and opens the way to infection. This objection is just, if you content yourself with simple ablation of the false membrane. You must, at the same time that you remove the false membrane, cauterize the subjacent mucosa, and it is necessary to employ for this purpose an agent which is both caustic and antiseptic, which kills the infectious germ, and cauterizes the mucous membrane. Now it seems to me that of all the antiseptics, concentrated phenic acid is the one that best fulfills this double indication.

Phenic (carbolic) acid, in concentrated solution in alcohol is the best topical agent to employ in diphtheritic angina. Instead of pure phenic acid, I ordinarily employ a preparation, the formula of which originated with Dr. Soulez, under the name of *phenicated camphor*. Dissolve from 5 to 10 grammes of concentrated phenic acid, and from 20 to 30 grammes of camphor in ten grammes of alcohol at 36° C. (100° F.), and add to this solution an equal volume of sweet oil, or sweet almond oil. The application of this agent is less painful than that of simple phenic acid; but I have sometimes, with equally good results made use of the concentrated alcoholic solution of phenic acid, diluted with an equal volume of sweet oil or almond oil, without the addition of camphor. The mixture of camphor and phenic acid, is, however, preferable, although in this preparation the camphor is of secondary importance, the essential agent being the phenic acid.

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* See *The Medical Age*, March 25th, 1889, p. 135.

Dr. Soulez, of Romorantin, had indeed used the phenicated camphor in diphtheritic angina, but he employed it only in light paintings or touches over the diphtheritic patches. He attributed to it the advantage of not being a caustic, of respecting the surrounding parts, of not wounding the epithelium whose destruction is one of the circumstances which most favors the invasion of the diphtheritic infection.

Now I believe, on the contrary, that the strong carbolic solution, with or without the camphor, is an energetic caustic, and this is precisely the advantage that I claim for it. I do not employ it simply in *light touches*, but I endeavor by an energetic swabbing and rubbing to remove mechanically the false membranes, using for this purpose a swab which has been dipped in the caustic solution; nor do I fear to denude the mucous membrane, which I take care to have thoroughly cauterized by the antiseptic agent. I combine the mechanical action with the caustic and antiseptic action. The topical agent which I employ is that of Soulez, as I have said, but the therapeutic method is mine.

I no not mean to say that cauterization of the throat in diphtheritic angina is a new method; it was formerly a custom to cauterize the false membranes in diphtheria with nitrate of silver, with hydrochloric acid, etc., and success was obtained thereby—more success, certainly, than when the false membranes were respected; but the old method was imperfect, for the cauterization was not done thoroughly enough to prevent the general infection, and in some instances, even, it may have favored it. The advantage of the phenic acid, I repeat, is that it is at the same time a caustic and an antiseptic.

Such is the principle of the therapeutic method which I propose, after having employed it with constant success:—To remove or destroy the false membrane, to cauterize the subjacent mucosa, and at the same time prevent general infection—thanks to the employment of an antiseptic caustic.

The application of this treatment presents some difficulties, and it is important to understand all the details of the process.

With the liquid of which I habitually make use, and whose mode of preparation I have given above, I make thorough and frequent applications to the diseased surface; but it is not sufficient, as I have already said, to paint the throat with this agent, you must at the same time, remove the false membrane by energetic rubbing. I make use of a pencil of hog's bristles roughly trimmed in the form of a brush, or, what is simpler still, of a swab formed by wrapping a little absorbent cotton or antiseptic wool around the end of a small twig or stick. This swab is saturated with the caustic solution, but it must be carefully dripped before applying it to the throat, for you must not let any drops of the liquid fall into the mouth or windpipe.

The mouth being widely opened, and the tongue depressed, you carry the swab charged with the liquid into the back part of the throat, applying it to the tonsils, to the velum pendulum, etc.; you should rub vigorously the diseased surface, in order to detach and remove the false membrane, which remain adherent to the swab under the form of debris or flakes. After each rubbing, the swab is washed in a carbolic solution; these frictions should be repeated several times at each séance, till all of the false membrane has been removed or destroyed. You make a final application of the swab to the throat in order to touch with the caustic all the surfaces which have been denuded and despoiled.

This operation should be repeated morning and evening, and in the interval of the cauterizations, you should make every two hours large irrigation injections into the throat of carbolic water a one per cent. solution, using for this purpose an ordinary or fountain syringe. It is well, also, to make one of these irrigations immediately after each cauterization, in order to assuage the pain and smarting which this has occasioned.

The pain, in fact, is sometimes very severe, and in certain cases one needs very great courage in order to continue the treatment. You can, however, always mitigate the pain by previously spraying the throat with a three per cent. solution of hydrochlorate of cocaine.

The inflammatory action which follows the operation is not as intense as has been alleged. If deglutition is impeded, it is not notably more so that in any form of grave pseudo-membranous angina in which the false membranes cover the entire pharynx. But still, I admit the fact of the pain; I admit the inflammatory reaction and the difficulty of deglutition; I admit that the antiseptic cauterization may entail all these disadvantages. Who, however, would not consent to endure a little severe pain in order to have a better chance of being cured?

I recognize the fact that it would be desirable to find a less painful, and yet quite as certain mode of treatment, but while waiting till this shall be devised, I prefer a painful though sure treatment to any other less painful but more uncertain.

Another disadvantage which is sometimes met with, is the black coloration of the urine, due to the elimination of phenic acid. It is certain that as a result of the carbolic cauterizations, and irrigations to which I attach so great an importance, a small quantity of phenic acid may be absorbed. This event can not be but advantageous in combatting the general infection; I have never seen it produce grave accidents. I have never observed, strictly speaking, phenic-acid poisoning.

Since 1879, I have treated by the method which I have just set forth, sixteen cases of grave diphtheritic angina, where the diagnosis was most positive.

I intentionally leave to one side all the benign cases of pseudo-membranous angina of somewhat doubtful nature, to which I applied the same treatment.

In sixteen cases, I have had sixteen recoveries. These cases were of the utmost gravity; several of them, as that of Albarran which has been reported by Dr. Le Geodre, were desperate cases, for which I was called only as a last resort.

These are principally the facts which I wish to submit to my confréres in all their simplicity. It is well that I should remind this assembly in this connection of the remarkable success which my colleague, Dr. Dubousquet-Laborderie claims from this treatment; the latter having, since 1884, treated eighty-four cases of a grave and malignant character, according to my method, which he has successfully followed. Of these eighty-four cases, eighty made a good recovery; a record of ninety-two per cent. of recoveries in grave diphtheria is surely something unprecedented. My colleague's report will be found in full in the number of the *Bulletins et Mémoires, de la Societé de Médicine Pratique*, for January 15, 1889.

Most of my observations concern adults. In children, the application of this treatment is more difficult, but it is not impossible; only we act somewhat blindly. It is necessary to wrap the child in a sheet, in order to keep it perfectly still, to wedge the mouth open by means of two corks, one on each side of the jaw; to introduce between these two corks the brush soaked in the caustic solution, and to swab vigorously the entire throat, The carbolic irrigations should be made as in the adult. When this treatment is applied from the onset of the angina, it almost always prevents general infection; the fever falls by an abrupt descent of the temperature after the first cauterization; there is no albuminuria.

When the treatment is applied at a late date, the general infection is already realized, the urine is albuminous; but this albuminuria, which is the most certain sign of the infection, is also a necessary phenomenon, which proves that the renal filter has been forced, and gives passage to the parasites which infect the blood. I do not mean that the albuminuria, in itself, is a favorable symptom, but it is the proof of a necessary elimination. In such cases, then, the general infection has taken place; I do not make any pretensions to circumvent this all at once, but I believe that the antiseptic cauterization of the throat prevents the continuance of the infection.

Thus, on the one hand, the infectious germs already in circulation in the economy are eliminated by the urine; on the other, the multiplication of these same germs in the pharynx is arrested; the organism is not infected anew, thanks to the incessant destruction of the false membranes; the few germs which escape the caustic solution cannot enter the blood vessels, owing to the cauterization of the denuded mucosa. The spontaneous effort of nature and the therapeutic efforts of the physician unite in bringing about the same end, and result not only in the cure of the angina, but in the prevention of the general diphtheritic infection.

Editorial note. In the above paper by Dr. Gaucher, who, whatever may be said about the *harshness* of his treatment, has quite a following in France, who claim that the results which have attended his efforts in treating diphtheria, and the latest teachings of experimental science gives support to his method—allusion is made to a communication by Dr. Dubousquet-Laborderie in the *Bulletin de Mémoires de la Societé de Médicine Pratique*, for January 15, 1889, where Dr. Gaucher's mode of treatment is endorsed and enforced by powerful considerations.

Dr. Dubousquet employs along with the cauterizations, carbolic injections (10 per cent. repeated every two hours), and he highly commends these injections. With the injections, the false membranes become more quickly detached; he would not rely on these injections exclusive of the cauterizations to prevent general infection. With the cauterizations alone, he says, the duration of the disease is longer by three or four days than when the injections are used along with them.

The great objection to this heroic treatment of diphtheria is its difficulty of application in young children, and the painfulness of the cauterizations. Many parents would decidedly object to what they must regard as a cruel procedure. We are certain that in children under five years of age, such treatment, carried out in all its rigor, would be found very impracticable. Few physicians in this country, certainly will have the hardihood to follow the leading of Drs. Gaucher and Dubousquet, however theoretically and scientifically correct their therapeutics of diphtheria may be.

INTESTINAL ANASTOMOSIS.* By Robert Abbe, M. D., Surgeon to St. Luke's Hospital, New York; Consulting Surgeon Hospital for Ruptured and Crippled; Professor of Clinical Surgery Post-Graduate Hospital.

About three years ago a lady came to me from the South with a fæcal fistula in the right groin, resulting from the sloughing of five inches of intestine in a strangulated hernia. Three physicians had made intelligent operative efforts to close it, and left her only worse off, as the distal end had slipped back and been lost in the abdomen. The case was a challenge to surgical skill. During several months I made careful and conscientious attempts to cure her. At first, the abdomen was opened to search for the distal end; it could not be found. Therefore, I stitched the proximal end and the ascending colon side by side in the wound, and a few days later opened the colon. A permanent channel was thus established between ileum and colon, when the fistula was capped, and some movements occurred per annum. Dupuytren's enterotome was then applied, and the spur cut through for two and a half inches. Still the big fistula leaked most of its contents.

Two elaborate plastic operations were then done, using the abdominal skin after the manner of Czymanowski, by which I had closed urethal fistulæ. But these proved futile, and she remained with the usual excoriated abdomen, filthy wound, and marasmus. My colleague, Dr. McBurney, then tried a partial resection of the edges, with inversion and suturing, and from this operation she died.

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* Read before the Philadelphia County Medical Society, May 8th, 1889.

I have narrated briefly this case to illustrate what you know represents a considerable class of sufferers whose fæcal fistulæ until very recently baffled the surgeon. Such cases rankle in the memory of us all, as marking the limit at which successful work comes to a halt. To-day, thanks to the untiring energy and genius of Dr. Senn, of Milwaukee, such and many other cases can be offered the hope of immediate relief by intestinal anastomosis.

The principle of intestinal anastomosis is by no means new. It is on the technique of operative procedure only that its appeal to renewed favor rests. I need not narrate to you the methods formerly in vogue to restore the intestinal canal. Plastic operations, resections with circular entororraphy, and lateral apposition with suturing, have had a certain value for many years; the unanswerable objections to them all being a dangerous consumption of time, frequent leakage, and secondary abscesses. With Senn's researches, new life has been infused into this branch of surgery. I will not review his work, but remind you for the moment that it covers the ground of experimental production of intestinal flexion, volvulus, stenosis, invagination, and resection, and in reparative work the study of two methods of restoring the intestinal canal—lateral implantation of a smaller into a larger gut, and lateral apposition of openings into similar portions of bowel. The outcome of it all has been an anastomosis of an interrupted intestinal canal by the safe and speedy method of using decalcified bone plates for approximation. I believe the value of this method will soon be recognized everywhere. His experiments have already been repeated by several and the results uniformly verified.

Those done by Mr. F. B. Jessett and Mr. Victor Horsley, and reported six weeks since to the Royal Medical and Chirurgical Society, are noteworthy. Jessett adds his statistics to those of Senn and Curtis, and finds that approximation by the Czerny-Lembert method showed a mortality of about 86½ per cent. against 25 per cent. by the method of lateral implantation, and 7½ by means of Senn's bone approximation disks. A method which thus offers an advantage ten times as great as the old one in mortality, and that can be done in one-third or one-quarter of the time, may well inspire enthusiasm.

The application of this principle to man has as yet been limited. Dr. Senn has in six cases applied the plate method in gastro-enterostomy for cancer of the pylorus with results detailed in four of them in his *Intestinal Surgery*. The two recently done are also successful.

Dr. Fenger, of Chicago, and Dr. Hunter, of Minneapolis, have also used them. Successful each in one case. Dr. Ransohoff, of Cincinnati, operated, December 31st, for gastro-enterostomy by plates in a case of malignant pyloric stenosis with excellent success.

An extended search fails to find other recorded cases. My own experience includes some experiments on dogs, and two successful applications to the human subject. The man whom I first operated on lived three and a half months after I united his ascending and transverse colon by Senn's plates on either side of a malignant stenosis of the hepatic flexure of the colon. His case has been fully reported in the *New York Medical Journal*, March 23rd, last.

The essential points of the case were, progressive obstruction, enormous fæcal accumulation, marasmus, and finally collapse—relieved by a colotomy done when he was *in extremis*, and followed six weeks later by colo-colostomy with Senn's plates, November 14th, 1888. After this he rapidly gained and in three months was enjoying excellent health. Suddenly there ensued a painless diarrhœa that could not be checked. Rapid emaciation and death followed in twenty days. Autopsy showed that nature had made an artificial opening between the duodenum and transverse colon at the site of malignant stricture. Thus all the small intestine had been excluded and food passed practically from his stomach directly into his colon undigested; and starvation followed.

The specimen which you see shows perfectly the aperture between the portions of colon. It is an oval the long diameter of which is an inch and a quarter; nearly as long as the incision made three months before. It shows there is little to be feared from the contraction of the opening, and it also shows that an opening very much smaller than the diameter of the bowel is competent to allow one part to empty into another.

I would have been very glad to have been able to make a larger opening, but this was about the maximum possible by using Senn's plates. The patient had had daily evacuation of the bowels, but it had been half the time through the use of mild cathartics. A larger opening would have obviated the use of these.

The needs of this case, coupled with the fact that I had not been able to get large enough plates to suit the colon, and that the preparation of decalcified bone plates consumed several days and considerable labor, led me to review the ground that had been gone over to get a more available material. I was aware that almost every known soluble substance had been tried, including cartilage which Jobert and others had used. I devised a ring of rubber made in segments fastened by catgut which would fall apart after a few days, but abandoned that when I made a stiff one entirely of catgut, which, being wholly digestible, would accomplish what the plates of bone would and then disappear. I made some small sets and tried them on a dog, with the assistance of Dr. Weir and Dr. B. Farquhar Curtis. The beautiful results are seen in these two specimens. When the gut was cut, the ends were invaginated and sutured by continuous Lembert stitch. The two ends being laid side by side, a longitudinal cut was made in each near its end, a ring slipped into the gap in each and four sutures on the ring stitched through the edge of the gap. The corresponding threads now being tied, pulled the two rings together, and the edges of the opening were thus sandwiched, as it were, between two rings. Four extra silk stitches were added outside to prevent the lips of the cuts puffing out between the first threads.

The proof of the security of apposition is seen in the dog's recovery. Evacuations were free and regular after the operation, and each of these specimens were taken out with the dog in perfect health, nine days after the operation. The union was so perfect that the intestine would have burst elsewhere sooner than have given way at this place. The catgut had entirely gone; a few of the silk threads that held them were yet loosely hanging in the puncture points, ready to come out on slight pulling. The coils of approximated gut, though performing their functions well, showed considerable contortion, and in two later experiments, the results of which are here seen, I turned the divided ends to look in opposite directions with better result. These were done on the same dog at the same time, and were made to show a class of physicians the advantage of this method where multiple resections of the gut might be called for, as in gun shot wounds. Four inches of intestine were cut out at each place, and the catgut apposition rings applied, the ends being reversed. The result has been perfect. A very large aperture of communication has been obtained by the long narrow ring, which so easily slips into the bowel. The twisting of the adherent coils was not nearly so much as in the former case. I am convinced that by the two expedients of using long narrow apposition rings to obtain a large opening, and by placing the intestines as suggested, to obtain continuous peristaltic wave, we obviate a temporary blocking of the operated part which must obtain with the bone plates and small openings, and which leads to so much twisting.

In this experiment it took exactly fifteen minutes to resect and complete each apposition. This includes a continuous outside silk suture around the circumference of the ring, which was applied quicker than half the number of interrupted sutures could have been.

An opportunity now came to put in practice the method above described. In November last, a woman of slight build and thirty years old came under my care at St. Luke's Hospital, with a history of uterine disorder for two years, and presenting a small tumor in the right iliac fossa. She had vomited, become anæmic, suffered much local pain, and had developed night-sweats with slight hectic. Pyosalpinx was diagnosed and operation advised. A five-inch median cut was made above the pubes. The diseased mass with omentum and coils of small intestine intimately adherent, was found to be a suppurating ovary as large as a goose-egg. Some intestines were stripped off, others seemed too firm. One of my assistants, a distinguished disciple of Mr. Tait, being asked to examine to see whether the tumor could be removed, or whether it had best be scraped out and drained, succeeded, while examining, in digging the ovary from its bed after the manner of Tait, who says no tumor of this character need ever be left no matter how firmly adherent. I was surprised and delighted to be shown that this mass could be thus removed by the fingers. Notwithstanding that the suppuration had been disseminated in the wound, it was readily douched away by copious hot-water effusions; but great chagrin followed the immediate discovery that a circle more than an inch in diameter had been torn from the side of an adherent loop of intestine and was on the tumor. Fæces appeared at once in the deep cul-de-sac of the pelvis. I promptly found and sutured the damaged bowel, irrigated and applied a tamponade of iodoform gauze lightly, and closed the wound except for drainage. Two days later, fæces welled up in the wound, and a horrible, and, I feared, a hopeless fæcal fistula was thenceforth established.

During the following six months the patient passed through not only the suffering incident to her fæcal fistula, but also a severe attack of scarlet fever with acute desquamative nephritis. And when I returned to hospital duty I found her emaciated and weighing less than seventy pounds. Her abdominal wound healed, except over the pubis, where a long funnel-shaped wound, lined by poor granulations, gave vent to her entire fæcal discharge, which came from the depths of the pelvis. The skin about it was sadly excoriated, and too tender to allow adhesive straps to retain dressings. She was of a cheerful disposition, and hopefully looked to me to relieve her, even at the risk of life, which had become a burden. With the picture in my mind of the intestines matted together, and in the midst of all a portion whose lumen was destroyed, from which fæces poured in the site of the ovarian abscess, I looked upon the case with grave doubt of cure.

The more so, because she had been subject to a hectic, with daily exacerbation of temperature to 102° and 103° up to the day of operation. My experiments with intestinal anastomosis, however, gave hope, and on March 22d—six weeks ago—I operated in the presence, among others, of your President, Dr. Keen.

Ether anæsthesia was used, notwithstanding she had five per cent. of albumin in her urine.

I dissected out the poor cicatrix around the funnel-shaped fistula, and opened the laparotomy wound upward. The intestines in the entire lower abdomen were matted firmly together, and uniformly studded with miliary tubercles. The pathologist's report confirms this, and I presume the original ovarian mass was a tubercular ovary, though I regret to say it was mislaid at the operation. With great care the intestine leading to the fistula was dissected out on either side of it for four inches, and cut squarely across. The ends were then turned in for half an inch and closed by a single row of continuous Lembert sutures of fine black silk. It was impossible here to turn the ends in opposite directions, and they were laid side by side, split open longitudinally for an inch and three quarters, nearly to the end, and united by catgut apposition rings, with a half-dozen reinforcing silk stitches outside. The entire wound was douched liberally with hot water, and a portion of the deeply adherent gut between the cut ends was further dissected away. The wound was closed, except for a light tamponade of gauze at the site of the fistula.

The patient rallied nicely, had no pain whatever afterward, and no fæces came into the wound. She had a little vomiting the next day, but retained koumys and champagne, an ounce every two hours, in drachm doses. At the end of the fourth day, her temperature having risen to 102°, I gave liq. magnes. citrat. ℥jv, and repeated. Three natural and painless movements passed by the rectum for the first time in six months, and her temperature fell to 100°.

Daily movements took place from that time on, at first assisted by four ounces of magnesia every third day. The wound granulated nicely, and no fæces have ever appeared there.

The patient walked about after the fourth week, and is restored in appetite and health. She now gains three pounds weekly, is free from pain, and is making a happy convalescence. Her evacuations are normal and regular, well formed, and occur without the use of medicines.

Thus is completed a proof of the efficacy of a new method, treating a malady which I know of no other method as competent to cope with.

I can hardly conceive of a fæcal fistula in any part of the bowel (except perhaps, low in the rectum), that may not be safely cured by this method, provided the distal portion is not blocked by disease.

In cases of gangrenous hernia, bullet or other wounds requiring exsection of a portion of the bowel, it may be applied at once, or after an artificial anus is established and the patient is convalescing.

No surgeon or physician need hesitate to make a fistula to relieve obstruction, or in other suitable cases where the equipment to complete the immediate anastomosis is not at hand, or where the patient's condition will not endure much interference, as in the first case narrated.

Two weeks ago my friend Dr. Charles McBurney, applied a set of my catgut rings to a case of gastro-enterostomy and writes as follows:

"The case was one of cancer of the pylorus which caused total obstruction. The patient would not consent to an operation until he was nearly moribund. The anastomosis was made between the highest part of the jejunum and the anterior of the stomach, near the greater curvature, and about three inches from the pylorus.

"The operation was perfectly easy and rapid, and the rings acted perfectly. The whole operation took forty-five minutes, much time being lost on account of imperfect washing of the stomach beforehand. I think it could easily be done inside of thirty minutes.

"Death occurred from inanition about twelve hours later. On careful post-mortem test, the stomach being filled with colored fluid and held up, absolutely no leakage at the site of operation occurred.

To make the rings most efficiently the following steps must be observed: A moderately heavy catgut is chosen; taken from alcohol or juniper oil, it is wound loosely on a test-tube and soaked in hot water. It soon kinks up, and were it not on a tube could hardly be unravelled. After a while it is straightened out, allowed to untwist, wound again loosely, and soaked in hot water once until it ceases to twist. It is then ready to make up into rings, which will lie perfectly flat. Eight or ten turns over two pins stuck in a cork two inches apart, will make a bundle somewhat smaller than a lead pencil.

These may be tied at four places with fine silk, to secure the strands parallel while being wound round like a cable, with a continuous piece of the same catgut. The end of the piece is secured by threading it into a Hagedorn needle, and transfixing the whole bundle obliquely with it at the place of finishing. Thus there are no knots, and it is difficult to find the point of beginning.

The ring is now a long oval with an inside diameter of two inches, and in thickness smaller than a pencil. Six strong but small braided silk threads are now fixed to each ring, equidistant, on the face looking toward the other ring which is to be laid against it.

No knots are used. A needle pierces the ring between the strands, carrying the thread, which is drawn through, all but eight inches, and wound once and a half round, sinking between the encircling catgut piercing the ring again, and cut off. The rings, which have now been water-soaked are ready for use, if needed for emergency; but, if possible, they should be kept awhile in alcohol, under pressure between two glass slides, the threads being curled up within the oval, and the sides being pressed together after the glasses are tightly tied together. The ring thus becomes a long oval with parallel sides, and becomes harder and flattened on its faces. Moreover, it shrinks a trifle in alcohol, to swell again in the intestine and give additional security.

In using the rings, I find it saves time to have each thread have its own needle. The intestine is pierced from within outward less than a quarter of an inch from its cut edge. The ring should be laid on a damp folded towel with threads in order and needles stuck in the towel, which is held by the assistant close to the bowel, while the operator quickly pulls the threads through and passes the ring into the interior of the bowel. When the threads are tied and cut off, the apposition is perfect, but by a quickly made running suture outside all, a half inch of peritoneal surface is at once secure beyond the possibility of leakage. More than this is superfluous, for the edges held between the rings act as valves.

In invaginating the end of the cut intestine after exsection, one will delay a long while if he tries to turn in first one and then the other edge, and will also find the mesentery try to turn in after it on the attached side. My rule is to trim back the mesentery at least a half inch from the end. Then seizing both lips with toothed forceps, plunge them directly into the lumen. The entire edge usually follows, and one holds them by the left index finger and thumb while a quick running overhand suture of the slit thus formed is made.

ORIGINAL ABSTRACTS.

By KIRKLAND RUFFIN, M.D., Norfolk, Va.

REPORT TO THE SCIENTIFIC GRANTS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION ON THE CONTROL OF HÆMORRHAGE FROM THE MIDDLE CEREBRAL ARTERY AND ITS BRANCHES BY COMPRESSION OF THE COMMON CAROTID. By Walter G. Spencer, M.S., and Victor Horsley, B.S., F.R.S., (From the *British Medical Journal*).

If cerebral hæmorrhage be looked at for the moment as simply bleeding from a torn vessel, its severity falls under three divisions: (*a*.) so much blood is poured out that death immediately ensues; (*b*.) the hæmorrhage is so small that it ceases immediately; (*c*.) the hæmorrhage continues for a longer or shorter time. The third division is practically the only one in which any active treatment directed towards the arrest of the hæmorrhage is required.

The symptoms in the onset of cerebral hæmorrhage are of two kinds:—1. Local,—Spasms followed by paralysis, resulting from tearing or compression of the portion of the brain about the hæmorrhage; dilatation of the pupil on the side of the hæmorrhage, etc. 2. General.—The cardinal signs of commencing compression of the brain. Later the condition is complicated by the occurrence of mechanical asphyxia, the best treatment of which appears to be the lateral posture advocated by Dr. Bowers (*British Med. Journal.* 1881, vol. i. pp 845).

No treatment can be said at present to be directed towards the arrest of the hæmorrhage. One mode of "treatment" is to raise the patient into a half sitting posture. By examination of monkeys we find that this treatment diminishes the whole circulation in the brain. No doubt the flow of blood from the bleeding vessel is lessened but so is it also lessened in the same proportion in the rest of the brain. But the brain at this time needs its full supply of blood in the respiratory centre to keep it at work, and in the areas round the injury so that the arterial flow should meet the greater resistance as the compression begins to involve these areas. Venisection is employed by some, which causes a diminution in the circulation of the brain and dilutes the blood with fluid drawn from the tissues, but does not effect the rapidity of coagulation. Now we believe that some recent experiments show that bleeding from one of the cerebral arteries—the middle, can be controlled by a means commonly employed to arrest hæmorrhage in other parts of the body, namely, compression of the main afferent vessel. It must be clearly understood that the middle cerebral artery does not form a part of the circle of Willis; it ascends, or rather its important branches ascend, vertically upwards, whereas the plane of the circle of Willis, is approximately horizontal. Further, the middle cerebral artery forms almost a direct continuation of the internal carotid artery. The main trunk ascends vertically and then bears outward from the middle line and backward in the posterior Sylvian fissure: but immediately after its origin, it gives off a large branch, also vertical, and several other large branches which penetrate the ganglia and its internal capsules, so that since the first of these, the lenticulo-striate artery (artery of hæmorrhage, Charcot), runs nearly vertically upwards, the axis of its lumen is in a line with that of the internal carotid. The force of the blood-stream in the internal carotid is diminished only to a certain extent by its tortuous course. At its termination the blood entering the circle of Willis has to take a horizontal course, but the middle cerebral, with especially its lenticulo-striate and other vessel branches, is open to receive the blood in the axis of the carotid.

The greater frequency of hæmorrhage from these last named branches is due of course to their liability to disease which, it is reasonable to suppose, is due to their exposure to the greater and more direct force of the blood-stream. It is at this point that experiments seem to support and extend these anatomical and pathological reasonings. We used for this purpose the same kind of Macaque monkeys which have been used in recent brain experimentation because their brain is very like that of man, and the cerebral circulation seems to be arranged on the same plan.

Experimental Method.—In a monkey under ether, the skull over the area of cortical distribution of the middle cerebral artery was removed, and the dura mater carefully raised without injuring the vessels. The branches of the middle cerebral artery were then seen pulsating clearly. The condition of the circulation was carefully noted, and then the common carotid of the same side was compressed through the tissues of the neck against the vertibræ. Immediately all pulsation in the branches of the middle cerebral ceased. The vessels were not entirely emptied; some blood still remained in them, but no pulsation could be seen even in the largest of them. The cortex, which the vessel supplied, became paler. On releasing the carotid, pulsation immediately returned, and the color of the cortex came back. This could be repeated over and over again.

If the skull had been sufficiently removed so that the areas supplied by the branches of the anterior cerebral, or those supplied by the posterior cerebral were exposed, it was seen that no change of the circulation in these vessels took place when the carotid was compressed, they continuing to pulsate whilst all pulsation had ceased in the branches of the middle cerebral.

Another series of experiments showed the effects of thus cutting off the blood supply. The electrical excitability is practically immediately lost while, if the circulation be restored, the excitability returns.

If the carotid be compressed for a considerable time, the anastomosis of the circle of Willis begins to fill the branches of the middle cerebral, showing that the arterial areas do anastomose to a certain degree on the cortex. To further elucidate the point, we examined the branches of the middle cerebral two hours after ligation of the common carotid artery. The branches were fairly well filled; pulsation was slightly but not well marked, though the color of the cortex was normal. On comparing the two sides, the electrical excitability was the same, but the pulsation was more marked on the side on which the carotid was patent.

This explains the immediate paralysis which has occasionally been seen after ligature of the common carotid, namely, paresis of the face, arm and leg, sometime, however, soon passing off. This was more often noticed in the days before anæsthetics.

The next experiments were made upon the branches of the middle cerebral going to the corpus striatum and the optic thalamus. A large portion of one hemisphere of the cerebrum was exposed, and the common carotid of the same side was ligatured. A horizontal incision was then rapidly made with the brain at the level of the middle of the internal capsule, while the other hand raised the upper part of the hemisphere and held it inward. The horizontal incision thus made did not extend to the middle line or lateral ventricle, but cut across the middle cerebral artery in the depth of the Sylvian fissures and the lenticula-striate artery, with other smaller branches of the middle cerebral running vertically upward through the putamen, or outer zone of the lenticular nucleus. The middle cerebral and lenticula-striate arteries bled freely. The carotid was then compressed and the bleeding usually stopped at once, though sometimes there was a little oozing before it stopped entirely. When the clot was raked away, the arteries again bled freely but ceased again on compressing the carotid.

Application of the Method in Practice.—While suggesting the general application of compression of the common carotid in apoplexy it is necessary to add a few remarks on possible disadvantages resulting from the general adoption of such a practice. Of course it would only do good in cases of hæmorrhage which continue for a longer or shorter time.

The danger of using compression in cases of cerebral embolism, which are mistaken for cerebral hæmorrhage, probably amount to little and the cortical version would not in all probability be much if at all, increased. Unfortunately we rarely have an opportunity of applying this treatment because we can rarely be on hand at the right time. If there is time and opportunity a stout ligature may be passed around the common carotid. We think it well worthy of future consideration whether ligature of the carotid may not be proper in some cases of severe hæmorrhage, or when there is high vascular tension and a threatened recurrence of hæmorrhage.

COMPLICATIONS FOLLOWING ABDOMINAL SECTION. By J. M. Baldy, M.D., (From *The Medical and Surgical Reporter.*—Read before the Obstetrical Society of Philadelphia).

The attention of surgeons has been and is almost exclusively called to the perfection of the different abdominal operations and consequently the complications are either not noticed or are not published.

Most men see the operation, see the pathological specimen, and are satisfied as to the justifiability of the operation. They feel confident as to the result. They may or may not see the patient again but are satisfied to hear how the patient is progressing. Finally they have the satisfaction of learning that she is well and has been discharged. The case is probably reported cured and the favorable statistics swelled

The author thinks it is quite time to look at and study some of the dark sides of abdominal surgery. Our results, as far as removing the disease is concerned, are about perfected; but the after complications often produce symptoms as hard to bear, and fully as bad at times, as her former trouble. The author goes on to say that when he first began to give special attention to abdominal surgery, he was often disappointed in his results and that these complications were a source of great mortification to him but that now he must write many similar cases in the practice of others. Among its more frequent complications are hernias, simple fistulous tracks, fæcal fistulas, pain, pelvic or abdominal, and œdema of the lower extremities.

Holmes has found that he had thirty per cent. of hernias following his operations. His cases were for the most part hospital cases and as he could not follow them up there was probably a still larger proportion. The author considers thirty per cent. about a fair average. He does not consider a ventral hernia a harmless thing and moreover they often give more trouble than the original disease. These hernias tend to increase in size, and are in danger of becoming strangulated at any time and as a consequence require a second and more serious operation.

The causes of hernia have been a subject of dispute; some charging the drainage-tube with the results, and others the manner of suturing the wound. Whatever the cause, the lesion is certainly a lack of union of the muscular tissues and deep fascias. The author considers that a continuous catgut suture of the muscles and deep fascia is all that is needed, beyond the usual all-the-way-through suture and considers it quite unnecessary to pass a separate row of sutures in the peritoneum itself. The author next speaks of the large number of women who have fistula as a result of the operation. Some of these have followed the use of drainage-tubes and other have been produced by abscesses. The extra peritoneal method of treating the pedicle in hysterectomy is a frequent cause. He then gives the history of several cases. If abscesses form, it is better to go boldly in and empty them at once than to wait and have them open by a slow, tedious, and uncertain process.

Fæcal fistulæ are not so common; but when they do occur, they are usually so deeply seated and surrounded by inflammatory products that they cannot be reached, and if they are reached they usually require one of the most dangerous and difficult operations in the whole range of abdominal surgery. The usual cause is intestinal adhesions to diseased organs, and the prevention consists in the greatest care in tearing loose each adhesion and careful attention to after-treatment. If a fæcal fistula occurs, it had best be left alone. BRUCE

A continuance of pain, or the appearance of a pain not present before, following abdominal section is so common that every one engaged in this kind of surgery must have noted its frequency. This pain is usually not so severe but is of a constant nagging character and almost unbearable. Sometimes even another operation is required to get rid of this pain. Most of this pain is due to adhesions formed between the omentum or intestines and raw surfaces left by the operation, and the subsequent dragging on these points. These same adhesions may cause obstruction of the bowels at any time. To prevent these formations, the bowels should be kept soluble so that there can be no chance for adhesions to occur. The best way of accomplishing this is by purgatives and by not using opium. Oedema of the lower extremities also occurs, sometimes only temporarily but we believe of long enough duration and severity to give much trouble.

DISCUSSION.

Dr. Wm. Goodell agreed with the author in regard to the stubborn nature of fæcal fistulæ and to the impossibility of avoiding them. He had had three cases. He had had cases of fistula when the drainage-tube was not used, but they were due to the non-encapsulation of the pedicle ligature; on the other hand, in the case of ovarian abscess, he had kept up drainage for several months, and yet the track closed. He intends in a third case to pass nitric acid to the bottom of the fistula and see what he can accomplish in this way.

Dr. Goodell thought that operators would find many cases of hernia if they waited some time before reporting their cases. To avoid hernia he closes the abdominal wound in an analogous way to that described by Dr. Price. The tendon, when retracted, was brought forward as much as possible, with forceps, so as to bring it in contact with its fellow. He keeps his patients in bed for two weeks before he allows them to get up.

Dr. M. Price thinks that the surgeon is chiefly responsible for many of the accidents following abdominal section. He considers fistula a proof that the case has not been properly cared for. He does not believe that there is even five per cent of hernias, and considers the operation for their closure attended with no danger.

Dr. J. Price was rather surprised at the criticism of Dr. Baldy on our present position in abdominal surgery. In introducing sutures, he takes in half as much skin as fascia, and twice as much fascia as peritoneum; puts three or four sutures to the inch and ties them tightly. He cautions against allowing the patient to get up too early. He does not consider the operation for curing a ventral hernia dangerous. Peritonitis is often due to an imperfect toilet. The only good remedy for adhesions, which give rise to pain and discomfort, is to do the operation over again and remove the adhesions.

Dr. Montgomery was surprised to find hernia such a frequent complication. He had largely used the method of closing the wound suggested by Dr. Price, and has had no hernia that he knows of. When fistula is apt to occur, he thinks that drainage, *per vaginam*, might be preferable.

Dr. Hirst reports three cases which were followed by fistula. He hardly thinks the use of nitric acid as recommended by Dr. Goodell, free from danger.

Dr. Baldy said that he did not bring these cases forward as an objection to abdominal surgery but only to direct attention to the accidents and stimulate our efforts to prevent them. He said that he could add many more cases and some of them who had been in the hands of the most prominent men. He thought that many cases of fistula could be avoided by care in the use of the drainage-tube. He considers the hæmostatic forceps a common cause of hernia and thinks the less we use them, the better union we will get. Cleanliness in all its details cannot be too strongly insisted on.

At a meeting of the Clinical Society of London on April 26, 1889, Dr. Greville Macdonald and Mr. Charters Symonds read notes on "A Case of Total Extirpation of the Larynx for Epithelioma, with Recovery and a Useful Voice." The patient was a man, æt. 41 years, married, a commercial traveller, who was first seen by Dr. Macdonald on April 6, 1888. He then had loss of voice which had been increasing for the previous six months and complained of slight dyspnoæ on exertion; he had no pain or cough, neither expectoration nor hæmoptysis. The laryngoscope revealed a large, irregularly lobulated, greyish-pink neoplasm, occupying the anterior three-fourths of the rinia glottidis; much of the left cord was completely concealed by it, as well as the anterior half of the right cord.

On inspiration it fell leaving the right cord free. The posterior surface of the growth presented a small superficial ulceration. Examination with the probe indicated an extensive attachment to the infraglottic portion of the right cord while the ventricular band was quite free from implication.

Both cords moved freely, except so far as they were impeded mechanically. The posterior fourth of the left cord—the only portion visible—was greatly thickened and much congested. There were no enlarged glands. Dr. Macdonald then expressed the probable need of an external operation. A small portion of the growth was removed and examined, and seemed to be an epithelioma. On April 14th he urged extirpation of half the larynx, but an adverse consultation and the patient's wishes being against this, Dr. Macdonald removed the whole of the projecting neoplasm with the forceps on April 24th; hæmorrhage was rather profuse. The growth was soft and friable. On the following day the voice was completely restored; there was no trace of growth, but the left cord was uniformly thickened, rounded, and deeply congested, its movements being perfect. A week later there was seen at the junction of the anterior with the middle third, on the upper surface, a sharply defined silvery surface, flush with the mucous membrane, two or three lines in diameter. On examining this surface with the probe, it proved to be minutely villous. This appearance remained unchanged till July 30th, when the villous surface, appeared slightly raised above the surrounding surface, which was yellowish and opaque. On August 26th there was scarcely any change. On September 8th the voice was worse, the growth had taken a fresh start and was projecting over the margin of the cord, and extending to the anterior commissure. Again an operation was urged, but another opinion, while admitting malignancy, proved adverse to operation. On October 20th the growth had advanced rapidly, appearing very like its first aspect in April, though more congested. Again an external operation was urged. Mr. Charters Symonds was consulted, and asked to perform the operation.—Mr. Symonds then described the operation, which was performed October 28th, 1888. The trachea was opened above the isthmus, and Hahn's tube inserted, after which chloroform was administered. Then a median incision was carried from the upper end of theincision to the hyoid bone. The hyoid, like the thyroid, had to be dissected away. Then, the thyroid cartilage being fully exposed, it was divided in the middle line, and, being ossified, gave some trouble. The crico-thyroid and thyro-hyoid membranes were divided, with the crico-thyroid muscle, when the ala could be drawn aside and a view obtained. The growth was found to be longer than expected, and to involve the whole of the left cord, while the anterior part of the right looked granular and swollen. The mucous membrane and perichondrium were divided close to the upper border of the cartilage and turned off, the superior cornu being divided and left. The outer surface was thus easily freed. Then the inferior cornu was cut off, and here some little difficulty was next experienced in dividing the ligament and muscles. The mucous membrane was next divided below the cords and back to the arytenoid, and the ala being drawn forward the attachment of the arytenoid to the cricoid was severed and this cartilage dissected out of its mucous membrane covering. Then the anterior two-thirds of the right cord were removed, the end stitched forward with catgut. One vessel, a branch of the superior thyroid, required a catgut ligature. Hahn's tube did not completely prevent blood trickling into the trachea, but a sponge passed into the cricoid ring above the tube effectually accomplished this, so that no trouble of any kind occurred during the operation. Next day Hahn's tube was replaced by an ordinary cannula, surrounded with sufficient gauze to plug the trachea. He was fed for five days by an œsophageal tube. On the sixth he was able to swallow. On the seventh he got up, and left, three weeks after the operation, quite well. His voice was clear and good, and was said by his friends to be better than before. Recurrence took place rapidly, and in December he had to be tracheotomized. Later the growth was seen budding upwards on the right side, but being still purely intra-laryngeal, total extirpation was proposed, and was carried out on

December 22nd, seven weeks from the first operation. Hahn's tube was again used, and the median cicatrix opened. The larynx was isolated by dividing the attached muscles on both sides, and it was noticed that the left side had become quite hard. Then the cricoid was separated from the trachea and raised from the epiglottis without injury. The connection of the pharynx to the back of the thyroid was divided, and the epiglottis cut through in its lower third. The immense cavity was stuffed as before, and a feeding tube passed by the mouth and retained. This tube was removed in two days, and was passed every four hours by the wound. In ten days he was up and about. On the 8th he swallowed, and by the end of January he had improved in health, and was quite well, save for the escape of saliva through the wound above the cannula. No complication of any kind occurred. He had no pulmonary complication at any time. Mr. Symonds found that the best method of dressing was to use a square of gauze, and pass its centre well down into the cricoid, and then to pack this veil full of strips. The upper part of the wound was not packed so tightly as the lower part, and this allowed the saliva to escape. The patient found also that fluids were best swallowed after the second operation by lying flat upon his back. The patient was shown to the Fellows of the Society. He was in good health and spirits, and there were no signs of recurrence after four months. He could speak in a low, distinct, though gruff voice, and this was managed by passing through the upper wall of the cannula a curved tube which ran up to the base of the epiglottis, and admitted the air when he closed the cannula with the finger. This was found much simpler than the artificial larynx, and moreover the patient preferred the sound of his own voice. The vibrating structure appeared to be the mucous membrane of the pharynx running back from the epiglottis. This the authors thought was the first case on record in which the patient was able to speak after total extirpation of the larynx. Mr. Symonds pointed out that he was encouraged to obtain this result on account of a similar case he had heard of through a friend in Berlin. The parts removed were also exhibited. The primary growth was as big as a small hazel nut, while the recurrent one reached from the epiglottis to the lower margin of the cricoid, and had grown forward into the ala of the thyroid. It appeared to have originated in the stump of the right cord, which had been left. A microscopic examination of the growth confirmed the epitheliomatous characters. The artificial larynx, which had been obtained from Vienna, was also shown. The reed emitted a sound like an inferior toy trumpet, and could not be compared in efficiency to the voice possessed by the patient. The patient was able to speak in a loud though gruff voice simply by sending the air upwards through an aperture in the cannula. This was provided for by a large Durham's cannula, with an opening on the upper wall immediately behind the shield, through which passed a short curved tube in a direction upwards and then slightly forwards, projecting above the lower tube about three-fourths of an inch. In the posterior wall of the upper tube was an opening to admit air to and from the tracheal tube; the pharyngeal mucous membrane, falling in folds over the upper opening, was thrown into vibration, and a good vibrating voice was produced. During deglutition the upper tube was replaced by another of the same size and shape, but closed above so as to prevent the passage of food, etc., into the tracheal cannula. The present laryngoscopic appearances were as follows:—The epiglottis appeared perfectly normal; behind this one saw a funnel bounded by the lateral and posterior pharyngeal walls and the epiglottis; the apex of this funnel was composed of two folds of mucus membrane running antero-posteriorly, from between which, anteriorly, the air passed during phonation, causing them to vibrate. It was now more than four months since the second operation, there was no sign of recurrence, and the man was in good health.—Mr. Bryant congratulated Mr. Symonds, upon the result of his intervention. He said he was struck with the simplicity of the operation.—Mr. Lucas said it was well to bear in mind what the unaided powers of Nature were capable of doing in prolonging life in these cases. He mentioned that he had a patient, a woman, three years ago, in whom he had diagnosed malignant disease of the larynx, but who refused to be operated upon. She had gone on, and nothing had been done until the breathing became embarrassed; but before she came in she coughed up a piece of the growth and was relieved. He subsequently removed one or two enlarged glands, and the woman left the hospital.—The President hoped the subsequent history of the case might be provided, and asked what was the longest period of time that a patient had survived a similar operation.—Dr. Macdonald gave the history of the patient when under his care, and explained that the diagnosis had been arrived at six months before the patient would consent to an operation being performed.—Mr. Symonds, in reply, said he was unable to answer the question of the President, but that the subsequent history of the case would be carefully ascertained.—(*British Med. Journal*).

DURATION OF VITALITY OF TYPHUS AND CHOLERA BACILLI IN THE FÆCES.—Professor Dr. J. Uffelmann, of Rostock, on the basis of experiments tending to solve this question, which largely agree with those made by Kitasato, has come to the following conclusions:

In human fæces, that is in human fæces and urine, the cholera bacillus retains its vitality for four days at the utmost, if these fæces are kept, as usual, in privies or in large kegs or tubs. As a rule it dies much sooner, generally with the second or third day, often even on the first day. It seems to retain its vitality longer in a mixture kept at a temperature of more than 16° than in fæces kept at a lower temperature than 9°. It can also be found for a longer time in those fæces to which it was added in large numbers, than in those which contained but few. Whether the addition of urine hastens the end of the bacillus the author is not able to say. But the fact is of importance that it retains its vitality for at least twenty-four hours.

As regards the typhus bacillus, it was found to possess great power of resistance. Under certain conditions it retains its vitality for four months; it may even be assumed that it may last much longer even, since it existed in certain samples in large numbers at the expiration of that period. But its vitality in the fæces is not always the same; different temperature seemed to have a decided effect, experiments showing that in fæces kept at a temperature of 17°, or more, the bacilli increased in number, whereas with a temperature of less than 10° an increase is not to be thought of.—*Centralblat für Bakteriologie and Parasitenkunde,* 1889. No. 16.

THE ARREST OF GROWTH IN FOUR CASES OF CANCER BY A POWERFUL INTERRUPTED VOLTAIC CURRENT. By J. Inglis Parsons, M. D. (From the *British Medical Journal.*)

The *modus operandi* is as follows:—The patient is anæsthetized; the current is then passed through the tumor and all the tissues for some inches round it by means of fine, insulated needles, so as not to injure the skin. A battery of 70 cells, with an electro-motive force of 105 volts, is used; the intensity of the current to commence with 10 milliampères, gradually increased to 600, and flashed through the growth in every direction from 50 to 100 times, according to circumstances. The pulse and respiration are carefully watched. One out of the four cases treated, a woman æt. 63 years, with extensive carcinoma of the left breast, a presystolic *bruit*, and weak, intermittent pulse, was unable to stand more than 250 milliampères, and for this reason, when the current is applied to the left breast, electrical stimulation of the heart occurs, and if this organ is healthy an increase in the strength of its contraction appears to take place after its passage; but with the patient, who had cardiac disease, the improvement only continued up to a certain point, and then the intermittency increased and great irregularity occurred. It is only, however, in the immediate neighborhood of the heart and when it is diseased that this takes place.

The effects produced by the action of the electricity consist in a cessation of growth, gradual disappearance of pain, some shrinking and hardening of the tumor and enlarged glands, followed by improved nutrition and better state of the general health. The growth as a whole does not disappear, but remains as an inert mass, composed in all probability of fibrous tissue alone.

The advantages claimed for this method of treatment are as follows:

1. There is no destruction to the normal tissues of the body, and if recurrence should at any time occur, its progress can be immediately stopped, and the treatment repeated as many times as necessary. So far, cases able to bear the full strength required have shown no signs of recurrence.

2. Patients are not obliged to lay up, but are able to get about on the day following the operation.

3. The current can be passed through almost any part of the body,

and thus arrest growths which could not by any possibility be otherwise treated.

Case I. Aug. 15, 1888. A. L., æt. 38 years, married; family, four children; three miscarriages, no history of cancer in family. Had never had any abscess or swelling in the breast, nor any difficulty in nursing. Seven months ago she suffered from shooting pains in the left breast, and then noticed a lump there for the first time. She now has on the inner side of the left breast a hard nodule the size of a walnut, and a second one, three times as large, on the outer side, infiltrating the surrounding tissue. Nipple retracted, three emerged axillary glands, shooting pains in breast and down the arm. Diagnosis: Carcinoma of the breast, which was confirmed by Mr. Bryant. August 23rd. Operation. Current was raised to 400 milliampères. August 25th. No rise of temperature. The pain is gone. August 30th. Operation repeated. September 15th. The glands in the axilla treated in a similar way, and she was sent home. February 6, 1889. She has no pain, and the condition of the growth remains unaltered. General condition excellent. March 12th. Patient continues to be quite well.

Case II. September 26, 1888. S. H. æt. 62 years, married; family, three children. Twelve months ago, she first noticed two small lumps in her left breast and shooting pains have since developed. Now there is a large hard mass involving the whole of the left breast, and extending in the subcutaneous tissue on the outer side, and towards the axilla. The whole mass is adhesive to the pectoralis major; the nipple is markedly retracted. The pulse is weak, irregular, and intermittent. A presystolic *bruit* can be heard. Diagnosis: Carcinoma of the breast, also confirmed by Mr. Bryant.

October 4th. Operation. Current could not be raised above 300 milliampères, because the heart's action became very irregular and after thirty interruptions it became necessary to desist. October 10th. Same treatment applied to rest of the growth. October 25th. The gland in the axilla was treated, and the current was raised to 500 milliampères, and the patient was sent home next day. December 19th. No pain, no sign of recurrence. February 1, 1889. The last few weeks she has had a return of the old pain. There is some redness and further infiltration of the skin near the nipple, and also some puffiness and œdematous swelling on the inner side of the growth. The mass as a whole is movable. The swelling in the axilla where the whole force of the battery was used, remains unchanged, nor is there any return of pain in the shoulder or arm. February 2d. The operation was repeated.

The author then gives the history of two other cases—one a cancer of the cervix uteri with infiltration into both broad ligaments, which was considered too extensive for ordinary operation; the other, a cancer of the breast which had recurred after the removal of the breast two years before. These were operated on first on November 18, 1888, and January 18th, 1889, respectively, and the currents were increased up to 600 milliampères. On the last examination both were very much improved.

The author regrets that he could not cite more cases, and gives as his excuse for bringing these cases forward so early, the probability of his having to wait some time to obtain more cases for treatment. He thinks his result should warrant a trial in cases which are beyond operative interference with the knife, and in those who are too nervous to undergo such operations.

DUJARDIN-BEAUMETZ ON RECENT ADVANCES IN THE TREATMENT OF DIABETES.—The most noteworthy innovation in the pharmaceutical treatment of diabetes is the administratian of arsenicated lithia, which, though it may not have realized the sanguine anticipations of its introducer, Dr. Martineau, is nevertheless of service. The author gives eight grains of carbonate of lithium in a glass of Vichy water, to which two drops of Fowler's solution is added, to be taken before each meal. In diabetes of nervous origin, characterized by extreme polyuria, he gives ten-grain doses of antipyrine, sweetened with saccharin, three or four times daily. Its effect is to reduce the quantity of urine eliminated, as well as the sugar, the latter not only *pari passu*, but absolutely. Phenacetine and exalgine bring about the same results. He advocates the use of saccharin for sweetening purposes, and states that, provided the quantity ingested does not exceed two grains daily, no inconvenience is likely to be caused. Passing on to the dietetic treatment, the author speaks very highly of "soja" bread, the only drawbacks to the use of which are its disagreeable taste and and laxative action on the bowels. With references to the use of potatoes, he points out that they contain 17 per cent. of glucose, as compared with the 19 and 20 per cent. of best gluten bread; hence, that potatoes are preferable to gluten of bread. He stipulates, however, that the quantity ingested shall not exceed 100 grammes (7 ounces) daily, as otherwise it would do more harm than good. He remarks that milk augments considerably the proportion of sugar in the urine, and the same remark applies to fruits, and especially grapes. To make up for the loss of carbo-hydrates, fats and viands containing fat are to be commended—caviar, sauerkraut, etc. Alcohol must only be given with caution, and in limited quantities.—*London Medical Recorder.*

THE TREATMENT OF MAMMARY TUMORS.—The author considers his subject under three heads, according as are concerned: 1. Tumors potentially malignant, but usually classed as non-malignant. 2. Well-defined malignant tumors that are usually subjected to operation. 3. Tumors in a very advanced stage, ulcerating, or accompanied by great cachexia, that are usually considered unfit for operation. Beginning with the third variety, the indications are to relieve pain, to neutralize the offensive odor, and prevent and restrain hæmorrhage. For the first indication preparations of opium, belladonna, and stramonium, either locally or internally, or both, and ice-bags to affected parts, are recommended. For the second, Esmarch's powder is suggested, containing one part each of arsenic and muriate of morphine, eight of calomel, and forty-eight of powdered gum arabic, of which half a teaspoonful may be sprinkled upon the wound daily. To arrest hæmorrhage, any of the approved styptics may be used, and even if the case is well advanced it is advised to remove the growth, in most cases, for its palliative effect. For the second variety the author recognizes but one course as suitable—the complete removal of the disease by a cutting operation at as early a period as possible. The subsequent recurrence of the disease is not necessarily a contra-indication to subsequent operations. It is admitted that certain cases are not suitable for the knife, and may be attacked by caustics or cautery. In the third variety the treatment should be influenced by the age of the patient and the progress of the growth. In very young girls it is thought that the growth is invariably fibromatous, and will disappear by suitable general and local treatment. Compression has been found a very efficient method of treatment, and is recommended with great confidence by Paget. The conclusions are as follows: 1. In many of the very worst forms of advanced, painful, ulcerating scirrhus, where there is no immediate danger of death from marasmus or visceral complications, the breast may be removed with great benefit and relief to the patient. 2. All cases of malignant growths of the breast should be operated upon as soon as diagnosticated, the removal being made as thorough as possible. 3. All doubtful cases should be similarly treated. 4. All recurrent growths should be removed at their earliest manifestation. 5. All non-malignant neoplasms should be removed as soon as they show a tendency to enlarge, especially in women between twenty-five and forty years of age.—*Dublin Jour. of Med. Science*, January, 1888.

THE PREVENTION OF SUMMER DIARRHŒA IN INFANTS.—Dr. L. E. Holt (*Medical News*) emphasizes the following points:

1. Children should not be overfed at any time, but especially not in summer.

2. At this season, also, every dyspeptic catarrh should be attended to; many of these are promptly curable by merely clearing out the intestine and then cutting down the quantity of food.

3. Should an intestinal catarrh, even a very mild one, continue for two or three weeks, one may be pretty certain that he has something more than a functional disorder to deal with.

4. Every milk catarrh should be looked upon as the possible precursor of a severe type of intestinal disease, either near or remote.

5. In the treatment of all diarrhœal diseases, it should be borne in mind that there is something more to be considered than the bacteria and the products of decomposition, viz., the anatomical changes.

CLINICAL RECORDS.

CASE OF SALIVARY CALCULUS ; REMOVAL.—By Wm. H. Browne, F. R. C. P. Edin., &c.

It is not often that operative interference is required for the removal of salivary calculus in a patient so young as the one in question ; the following notes may, therefore, be of some interest to the readers of *The Journal.*

T. W. ——, æt. 8 years, a strong, healthy-looking lad, was brought to me by his mother for examination, as he complained of "a lump inside his cheek," with constant discharge of saliva, more or less during the day-time, though causing him little trouble during the night. On examination, I found a hard substance, the size of a small bean, blocking up Wharton's duct, with an anterior fistulous opening, through which the sharp end of the calculus projected. Large as the orifice was, I found it impossible to remove this body through it, so decided to slit up the duct. Some little difficulty was experienced in keeping the tongue out of the way, but the mother, " a strong-minded individual," gave valuable assistance by depressing and keeping the tongue on one side. A free incision over the tumor soon set the calculus at liberty ; it weighs a little over seven grains, and may be considered large for so young a patient.

That these calculi are rare no one disputes, but to me it appears strange that I should be able to record three cases in eighteen years, two of which were people in advanced life, the calculi in each case being small in size and easily broken up, the calcium base evidently being associated with some fatty matter. The calculus in the other case is apparently free from any organic contamination, at least so far as one can detect without chemical analysis ; it is hard in texture and in the same condition as when it was first removed some time since. From what I can glean, salivary calculi, rare as they may be, are more common in adult and advanced life, and are rarely met with in children, so that we may consider the age of the patient the most interesting part of the case. It is, perhaps, needless to say that the little fellow soon recovered from his operation, and the fistulous opening rapidly closed with that of the incision.

LONDON HOSPITAL.

OBTURATOR DISLOCATION AT HIP-JOINT WITH SHORTENING OF LIMB.—Under the care of Mr. Rivington.

The number of cases of dislocation at the hip-joint which come under the care of any one surgeon, even at our largest hospitals, is comparatively few, and it is therefore important that they should be placed on record, especially when they illustrate special points in the more rare varieties of this injury. Ashhurst* is of opinion that this form of dislocation is most commonly produced by falling from a height and striking obliquely upon the foot or knee, so as to abduct the limb forcibly. Others consider the falling of a weight on the pelvis, when the thigh is abducted—as in the first case which Mr. Rivington published—to be the commoner cause. This is, however, comparatively unimportant. Of more importance is the question as to whether there is lengthening or shortening of the limb. Mr. Holmes, in his case—that of a muscular young man,—says that "the injured limb looked much longer than the other, but accurate and repeated measurement, taken from the spine of the ilium to fixed points in the limb on the two sides, showed that this was due entirely to twisting of the pelvis." In a case of irreducible obturator dislocation of three years' standing, which was under the care of Sir William Mac Cormac,* there appeared to be some shortening of the entire limb due to interference with growth. No record of the condition of the limb in the first instance could be obtained. Malgaigne found a shortening of two centimetres ; Morris an inch and a quarter. The evidence in favor of shortening as an occasional symptom is thus accumulating. Sir Astley Cooper, however, stated the lengthening of the limb to be two inches. Fabbri always found from one to two inches' increased length on measurement. Hamilton† says "the thigh is apparently lengthened for from one to two inches," and refers to Mr. Rivington's cases in which the limb was shortened. Mr. Beck, acting as editor of Erichsen's Surgery, has not thought the evidence in favor of invariable shortening of the limb of sufficient weight to make it advisable to alter what has been taught in the past. We think, therefore, that it would be best to agree with the quotation of Mr. Pick given in the remarks, and regard shortening as a symptom occasionally met with.

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* **Encyclopædia of Surgery, vol. iii., p. 196.**

Wm. P. ——, æt. 30 years, Customs' officer, a tall, muscular, well-developed man, weighing 12 st., was admitted from the receiving-room into the hospital on Jan. 7th, 1889, complaining of pain in his left hip and inability to straighten the limb so as to bring it to the ground. An hour before admission, whilst stepping from one barge to another, the patient slipped and fell between the two vessels in such a manner that almost the entire weight of his body was supported by the left leg. In point of fact he was suspended over the edge of the barge by the left leg, the inside of the knee resting on the gunwale, and the thigh being in a position of fixed abduction. He could not extricate himself, but was released by his fellow officers and brought to the hospital. On examination the thigh was found much abducted, the knee bent and incapable of extension. When the patient was in the erect position, the left leg was advanced and the body bent forward. The bending of the trunk forward enabled the patient to bring the toes to the ground, but he could not bear any weight upon them. The limb was shortened about a quarter of an inch. On the other side of the hip, at the site of the prominence of the great trochanter, there was a marked depression ; and on the inner side of the thigh the adductors were felt as a tense band. By passive movement the thigh could be flexed on to the abdomen to the extent of semiflexion only, and adduction was impossible. Under an anæsthetic the dislocation was readily reduced by manipulation—

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* St. Thomas's Hospital Reports, vol. ix., p. 102.

† Fractures and Dislocations.

viz., flexion adduction, rotation inwards, and extension. All deformity disappeared, and the movements of the joint were completely restored. A long splint was applied without extension. At the end of three weeks the patient was allowed to sit up in bed, and three days later to sit up out of bed. On Feb. 24th, twenty-nine days after the accident, he left the hospital able to walk well, slight stiffness only remaining. A month later he came to the hospital. He had resumed his employment, and the use of the limb was perfect.

Remarks by Mr. Rivington.—In reporting a case of obturator dislocation of the femur in a paper in *The Lancet*, (Sept. 7th, 1878), I called special attention to the fact that the limb was shortened half to three-quarters of an inch, and also to the circumstance that surgical authors spoke absolutely of about two inches lengthening being a special feature of this form of dislocation. I further showed, from experiment on the cadaver, that the limb was not lengthened when the head of the femur lay over the obturator foramen. In the present case also it will be observed that there was slight shortening. Again, in a case exhibiting an unusual form of dislocation of the hip which I have related in the Clinical Society's Transactions, (vol. xvii., p. 77), and in which, I believe, the head of the bone was lying below the cotyloid cavity, there was shortening to the extent of three-eighths of an inch. If the lower limb is ever lengthened in any kind of dislocation at the hip, surely it ought to have been in this last case. Doubtless it would have been lengthened if it could have been extended, but it was slightly flexed and could not be brought down straight. The muscles prevent lengthening when the head of the femur is on a lower level than the acetabulum, and when the head is on the same level clearly there can be no lengthening. My belief is that the traditional two inches of lengthening is an instance of defective observation, the lengthening being apparent and not real, as in the early stage of hip-joint disease. This "traditional two inches" still makes its appearance in some of the text-books (Erichsen, for instance, where no notice is taken of the cases reported where shortening has been observed). In the last edition of Holmes' Surgery, which has been very ably edited by Mr. Pick and made more systematic, it is stated that the thyroid dislocation "differs from all the other lesions about the hip-joint in the fact that the limb is really lengthened—at least it is so in some cases; while in others (as in one under my own care, and another under that of Mr. Rivington) the lengthening is only apparent, and is due to inclination of the pelvis." Mr. Holmes, in reporting his case in a clinical lecture published in the *Medical Times and Gazette* in 1877, doubted the possibility of lengthening in the true thyroid displacement and my own observations prove the correctness of Mr. Holmes' opinion. If that be so, ought not this impossible traditional two inches of lengthening in thyroid dislocations to disappear from our text-books?

Day (R. H.) on Idiopathic Acute Parotis; Sloughing of the Entire Gland; Recovery.—The patient was a mulatto woman, æt. 32 years, tall, thin, and narrow-chested. On Aug. 25, 1888, I found the left parotid very much swollen, very hard, and exquisitely painful ; and the whole integument on the left side from the chin, back to the mastoid and down to the clavicle, diffusely inflamed, and so extremely sensitive that the softest touch produced the most excruciating pain. The pulse was small, frequent, and feeble, and accompanied with great systemic prostration. I advised the application of a hot flaxseed poultice over the gland and inflamed integument ; chloral and morphine to ease pain and procure sleep ; a liquid nutritious diet, and enemata as might be required to move the bowels, and five grains of quinine to be given three times a day.

On the 13th of September I found the patient much exhausted and reduced in flesh from constant excruciating pain and inability and disinclination to take food. The gland and integument were still inflamed and more distended and painful, with obscure fluctuations at two points : (*a*) at the upper edge of the gland, and (*b*) below the angle of the jaw. The Doctor preceding me had supposed the case to be abscess in the mastoid cells, and had made a free cut down upon that process, but without finding any pus. I made a free incision at the two points designated ; from the upper one about a tablespoonful of ill-looking thin pus escaped ; from the lower opening only a little thin sanious fluid exuded.

These incisions into the parotid revealed the fact that the entire gland was in a sloughing process, that it was necrosed, and undergoing disorganization. I could with gentle force pass a silver probe in different directions through the gland, causing not as much pain as was induced by touching the investing integument.

I insisted upon the regular and frequent administration of cow's milk, beef broth, Ducro's elixir and port wine, and small doses of quinine three times daily ; fifteen grains of chloral with one quarter grain morphine were given as needed, both to ease pain and to procure sleep at night ; I used a flaxseed and charcoal poultice applied warm and made fresh three times a day, and injected into the upper opening a weak solution of carbolized oil at each dressing.

Every alternate day I made a visit and removed with forceps and scissors such portions of the gland as I could draw through the opening, and that were manifestly dead.

On the 20th of September I lifted out through the upper opening the entire remnant of the gland in a coherent mass, which had been completely detached, leaving a deep sulcus, or hollow, extending down to the underlying blood-vessels. This cavity I had syringed out daily with a weak solution of carbolized oil, and applied over the integument a thick pad of carbolized absorbent cotton and oakum, so as to press the surfaces together, to exclude the ingress of air, and facilitate granulation. The dietetic treatment was continued, and the chloral and morphine were dispensed with. In addition, I now put my patient upon cod-liver oil, which I found of great benefit. The cavity gradually closed and healed over, the patient in the meantime improving in flesh and strength, and finally was restored to her customary health ; leaving, however, a deep and marked depression in the site of the missing parotid.—*Med. News*, Feb. 23, 1889.

CLINICAL LECTURE ON HYSTERIA, NEURASTHENIA, AND ANOREXIA NERVOSA. Delivered at St. Bartholomew's Hospital on March 7, 1889. By J. Matthews Duncan, M.D.

Gentlemen.—I feel self-convicted of audacity and almost of folly in encountering in a single clinical lecture a subject so vast, so difficult, and so little known. In your practice in this department scientific attainments will not be of so much avail as in others. It is kindness of heart, wisdom, and firmness that are the specially useful talents. No doubt these qualities are in all circumstances valuable in practice as well as for their own sakes, but their application is at least less direct in the treatment of a uterine catarrh or in an ovariotomy than in the management of a hysterical or of a neurasthenic patient. They are not to be taught or learned in a lecture room, but it is my duty to point out their supreme importance in this great department of practice. If your patient thinks you are not sympathetic, she soon becomes alienated from you; if you are not wise in your proceedings and resolute in adhering to them, you will probably do harm rather than good.

Hysteria has alliance with insanity: it perverts the patient's judgment. It is ill-defined, and for this and other reasons patients dislike such affections in a sense in which they do not dislike many other tangible, easily intelligible diseases. If a patient is hysterical, and is told that she is hysterical by one physician, while another does not tell her this, but that she has some slight displacement of the womb, be sure she will prefer the latter. Yet the one is wise, and the other perhaps more than foolish. In practice you have firmly, yet without the appearance of sterness, to do your duty with simplicity, and at the same time maintain the confidence of your patient. Firmness and simplicity are the surest means of preserving your patient's confidence; but know and remember this, that in the class of cases now under consideration you will certainly lose your patient occasionally if you do your duty, and such loss is to be met quietly and even with joy. It is easy, and unfortunately common, to educate a patient into hysterical disease with its attendant misery to herself and her family, and very difficult to educate out of it; and the process of cure is to a great extent one of education. Consider the wisdom and tact required in a new and untried physician to successfully educate a patient out of injurious notions instilled by an old and respected friend and physician. Some vaunted and successful modes of so-called cure are in themselves of no power directly, but are efficient by eradicating from the patient's mind former bad medical education. A patient with an endless string of complaints may be quickly cured by a pessary for a displacement which does not exist, or by a dose of electricity, or by the last new fad, or by being forced or shamed into good habits. Do not condescend to cure patients in such ways. Be kind, wise, and firm; be direct and simple. This is the best because the most successful plan. It involves no untruth, no feint; it prevents and cures tens for the units cured by roundabout proceedings.

A story may impress this lesson. More than a year ago a patient came to me with aphonia. She had had it more than once previously, she said, and it had been difficult to cure. Electrical shocks had been used. I said it would soon go away, and refused any kind of treatment. More than once I had letters of lamentation at the persisting aphonia. Then she went to Brighton to reside with her relatives, who compelled her to press for treatment, which I again declined. Then a consultation was insisted on with a specialist. To this I yielded. The specialist found no disease, and suggested electrical treatment after a fortnight of further waiting. At the end of a fortnight I was again appealed to, and adhered to my original plan—no treatment, electrical or other. She went back to Brighton not well pleased. In a day or two she wrote to me that her voice was now as good as ever, and it remains so. She will not again have aphonia—as long, at least, as she continues to be under my care.

The name "hysteria" is much and often objected to, because the Greek root of it is "the womb." But it is not in anyone's power to make the profession give up its use or adopt another. Nor is it desirable that change should be made, otherwise than as the result of scientific progress. Many terms remain, not cavilled at, whose original meaning is lost or forgotten. Time has clothed them with a new meaning; and so it is with hysteria. I shall not even attempt to define hysteria. Old authors defined it and described it, and they made a horrid and amusing mess of it. The womb was represented as almost a distinct being, having *imperium in imperio*, travelling through the body or sending out spirits to various parts, creating disturbance wherever it or they went. Now it is well known that hysteria is essentially not a womb disease—not truly hysteria. It may occur before the womb is potent, and after its potency is past; and it occurs in men. But it may be said to have alliance with the womb, or with the generative organs generally, because it is far more common and more severe in women than in men, and it prevails chiefly during the period of activity of the genital system of organs. It is a gynæcological disease in this sense, that it especially attaches itself to the generative system, because the genital system, more than any other, exerts emotional power over the individual, power also in morals, power in social questions. In these respects the stomach, or even the heart, have comparatively little influence. Though the womb cannot travel through the body and produce diseases, yet in the hysterical state any part of the body may be affected, and many diseases may be mimicked more or less imperfectly; or novel combinations of symptoms may arise. When the word "mimic" is used, it does not always imply conscious imitation by the patient, nor does it always imply close resemblance to the disease imitated. Sometimes the so-called mimicry is very imperfect; sometimes so complete as to mislead, for a time, the most experienced and careful observer.

There is, as I have said, alliance between hysteria and insanity; and in most cases you can find a morbid desire of attention and sympathy—a kind of selfishness. Many cases are indeed fully explained by this, but there are also many where it is difficult to trace it. On the one hand, you have women whose hysterics are never seen except in a suitable presence and on suitable occasions; on the other, you have many cases where the women do not doubt the reality, as it is called, of their complaints. Before the days of anæsthetics, cases occurred where women attested the sincerity of their convictions by enduring the agonies of a great amputation for mere hysterical disease. Cases of the former kind are often classed, and often unjustly, as "humbug." Cases of the latter kind are often classed, and often erroneously, as "real." The former class is often cured by wholesome neglect—always aggravated by indiscreet attention or sympathy. It is this class which has brought the name "hysteria" into dispute, so that it is extensively regarded as a sneer or an insult to label a woman with it. But the name is still very useful, and I think its use may be with advantage rehabilitated. Much evil has, indeed, arisen from giving it up, the result being to conceal an important character of disease, invaluable in guiding the practitioner. For example, the common hysterical retention of urine has been often treated as if it were "real," not "hysterical;" and, unfortunately, this is now done under the ægis of a great author.

Here let me refer to recent observations and operative experiments which may seem to you to traverse the views I have been inculcating. Certainly they are founded on the belief that the genital system, especially the ovaries, are sometimes the seat or origin of epilepsy and some of its hysterical modifications. Oöphorectomy has been often performed for the cure of so-called ovarian epilepsy—epilepsy connected with the menstrual function. Some forms of epilepsy and hysterical convulsions and hystero-epilepsy are not pathologically remote from one another. Now, that epilepsy may own an ovarian origin no one will deny. But the cases operated on do as yet offer no support to the view. The epilepsy has not been subdued as was expected; and I believe this kind of operative treatment is given up. Only two days we had in "Martha" a case in which oöphorectomy for epilepsy had been performed in vain. The operation was by a surgeon eminent in the department; yet it is not a good test case, for menstruation is regular now, years after the ovaries were, as it is believed, taken out. Again, curious hysterical convulsions or tetanic phenomena—hystero-epilepsy—have been declared to be governed by pressure on the ovary by the practitioner's hand applied over it, the phenomena disappearing when the pressure is exerted vigorously, and recurring when it is taken off, much as water from the tap is stopped or flows as you turn the cock this way or that. These observations I merely mention. They are so unsatisfactory and so badly controlled as to be worthless. Directions are given to find the ovary by the intersection of lines on the abdomen; they also are worthless. Pressure over the supposed position of the ovary is made while the abdominal muscles are in tetanus, and such pressure is worthless. The observations are, indeed, poor exhibitions of the power of a clever doctor to educate a woman into a hysterical " humbug."

But though the particular observations and experiments, of which I have been speaking, have given us little instruction, the restless work of many neurologists has not been without result. The observed grouping of symptoms and consequent ranging of affections into categories is a sure step to farther progress. Already we seem to have reached a great clinical distinction between hysteria and neurasthenia; and we have also made out the anorexia nervosa of Gull—an interesting malady, and rare, at least in its highest degree.

The meaning of this recently introduced term, neurasthenia, lies on the surface; its exact definition is a difficult matter. It is a common, and therefore an important disease, and it is of great practical or clinical interest to distinguish it from hysteria. I have said that its definition is a difficult matter, and this arises greatly from the fact that it is used indiscriminately, or has been so used that it is only gradually crystallising into any kind of definition. It has been and is much used as an alternative word for hysteria, to avoid using that often offensive term. But hysteria maintains its place, and neurasthenia has to find—or has found—its own. Confusion often arises from the two conditions being combined. A woman may exhibit no hysterical symptoms until she has become neurasthenic. Her neurasthenia cured, the hysteria disappears. To see clearly the distinction between the two diseases, you must take characteristic uncomplicated examples of each. Hysteria may effect strong, robust, vigorous women, with no other functional disorder. It would be a contradiction in terms to say this of neurasthenia. A neurasthenic may be fat and healthy-looking, and have no other functional disorder; but generally such patients lose flesh, are sallow or look unhealthy, and they often suffer from distinct forms of indigestion and from constipation. A hysterical woman often shows great power and capacity of both mind and body. A neurasthenic has lost elasticity and power, or endurance, both of mind and body; the nerves are weak. Above all, a hysterical woman is selfish—she wants attention and sympathy; while in a neurasthenic no such special demand for sympathy is made. The hysterical are found chiefly, though not exclusively, among the pampered, the lazy, the unemployed. The neurasthenic are found chiefly among the intellectually overworked, and the worried or morally overworked.

Considering these differences between hysteria and neurasthenia, you need not to be told the great difference of treatment. In hysteria drugs are of little avail directly; often injurious, misleading the patient as to the nature and management of her case. Valerian, assafœtida, musk, castor, and other stinking things may have some mysterious potency, and so may the so-called nervine tonics. But your reliance is to be placed mainly and often exclusively on maintenance by regimen of health of mind and body. It is chiefly by moral influence that hysteria is to be cured; and the first place in moral management is held by the discreet use or disuse of attention and sympathy. Neurasthenia is to be managed in a different way, and among remedies the first place is held by rest, especially rest of mind; then come change of air and scene, and the remedies demanded by any special disorder of health.

Before concluding, let us return to consider for a few minutes the anorexia nervosia which I have already mentioned. What is it? To answer this question, let us take bad or characteristic cases; for less marked examples, though more common, are not suited for helping to form a picture of it. A good example is one of the most ghastly spectacles you will meet with in practice, but the sadness of the picture is relieved by the fact that they all recover, and recover completely. I daresay the disease occurs in men, but I am not aware of a case. The patient loses appetite and becomes emaciated. The catamenia cease, and if the woman is married, fecundity is arrested. The bowels are very constipated, the stools dry and hard. There is no increase of desire for attention and sympathy; on the contrary, the patient is rather inclined to reserve and seclusion. The patient makes little or no complaint; it is her friends that complain for her. There is no noticed weakening of mind. There is great desire for exercise, especially walking exercise; the patient has a degree of *festinatio*, and does not get tired, does not want to rest. Here you recognize a disease quite different from hysteria and neurasthenia.

The best example which I know of occurred in the grand-daughter of a great physician, whose perplexity was heightened by sympathy and the utter novelty of the case. The patient was generally healthy, even robust. She had been for some years married, and had borne a child. The date of the commencement and of the termination of her illness cannot be given—both were so gradual. The disease lasted for about three years. During all the time there was amenorrhœa and very obstinate constipation. The patient looked like the corpse of one dead from starvation. The skin was cold, sallow, and without lustre; the eyes healthy, sunken, and with a dark surrounding areola; the tongue clean; the pulse very slow, and only perceptible at the wrist; the breathing slow and very shallow; the urine healthy. The emaciation was not removal of adipose tissue merely, but also of muscle; for example, it is scarcely an exaggeration to say there was no gastrocnemius. She forced herself to take a fair amount of nourishing food, but always would prefer to abstain. She had great desire for walking and great sustained power of doing it, and she walked very quickly, not at her usual pace. She preferred greatly walking to driving with her grandfather, who naturally had difficulty in consenting to allow her to walk as much as she did, seeing the shrunken, atrophied state of the thighs and legs. Drugs were used in vain. She was urged to eat and drink. She was anointed and rubbed with oil. She was pressed to lead an inactive life. In course of time her health was in all respects restored—gradually. She began again to bear children, and is now a healthy, plump woman.

THE ACID SALTS OF PHOSPHORUS. A paper read before the Cincinnati Medical Society, April 9, 1889, By Joseph Eichberg, M.D., Cincinnati.

Of all the chemical elements entering into the formation of the body, there is none which deserves a more thorough recognition than the one which shall occupy us briefly this evening. Its actual quantity is very much less than that of the nitrogen compounds; it does not represent a group distinguished by the same functional activity as nitrogen; yet there is a decided resemblance between the two in the varying affinity for oxygen, leading to formation of a number of oxides and acids of varying basic strength, with the corresponding salts. Indeed, in some respects, the phosphorus compounds present a more interesting series than the nitrogen group; and the salts of lactophosphoric, pyrophosphoric, metaphosphoric and ortho-phosphoric acids, with the phosphorous hypophosphite group, constitute a very large family arranged about this central element.

From the physiological standpoint, the phosphorus compounds in the body are of the utmost value. Whether as earthy phosphates, preserving the erect figure and graceful carriage which single man out amongst all created living beings, or, alkaline phosphates, maintaining the needed alkalinity of the blood and aiding in the elimination of CO_2, or in the more complex form in which we find it an integral part of the most highly specialized tissues of the body, as the lecitoin of the central nervous system, in each of these combinations its physiological function is of a very high order, and its absence readily felt. The absence of the earthy compounds is a well-recognized concomitant, if not a casual feature, of those diseased processes in which general deformities are a prominent feature, as in the rachitis of childhood or the mollities ossium of later years.

The active rôle which phosphorus plays in the daily tissue change is approximately indicated by the quantity of phosphates present in the urine; an excess of these salts being regularly met with where the nervous system has been unduly taxed, or where there is too rapid tissue change from any cause. The ready test for such a condition of the urine is furnished by an abnormally high specific gravity—as high as 1032 or 1034 in many cases—with the appearance of a dense white cloud, almost as heavy as that due to pure albumen, on boiling, the cloudiness rapidly disappearing on the addition of a few drops of acetic acid.

It is the object of this paper, however, to deal more with the mode of administration than of elimination of this element; and to call attention to the acid salts as distinguished from other compounds. The experience of many years has clearly shown that the form under which the phosphorus is best introduced into the economy will vary with the indication. Thus, the hypophosphites seem best to supply the rapid tissue waste of such diseases as pulmonary phthisis; phosphorus in oily solution or phosphide of zinc are the best combinations for combating neuralgia and nervous disorder; and I should like to call attention to the propriety of employing the acid salts in various gastric disorders, presenting the common and familiar symptoms grouped under the head of dyspepsia.

Phosphoric acid, H_3Po_4, while distinctly a mineral acid, as much so as either nitric or sulphuric acids, is distinguished from these by one important feature, clinically speaking; that, even in concentrated solution, it is non-corrosive. Why this difference should exist, while phosphorus itself is a very highly irritant and strongly poisonous substance, it is difficult to understand; yet equally wonderful, is the allotropic modification, the waxy phosphorus, chemically pure, but never undergoing spontaneous oxidation, with a very high fusing point and absolutely not poisonous. Phosphoric acid in diluted form has a tart, slightly astringent and not unpleasant taste, particularly if dissolved in sweetened water. It is readily assimilated, being susceptible of perfect solution.

Phosphoric acid has, however, a local as well as a constitutional effect, and is of great value in many of those disorders known by the general term dyspepia. It is a familiar fact that many cases, subject to acid eructations and to a disagreeable sour taste in the mouth, owe this hyperacidity to a deficient percentage of free acid in the gastric secretion, in consequence of which fermentations are made possible. Such cases are best relieved by the administration of mineral acids, and it is in them, particularly, that dilute phosphoric acid renders invaluable service. It would seem to supply the needed acid factor to secure complete digestion; and, after absorption, to manifest that tonic effect on the nervous system, which seems to be a special feature of phosphorus compounds.

There has lately been placed upon the market a compound, containing a number of the acid salts of phosphorus which recommends itself to the profession by intrinsic merit, as a remedy, by its comparative cheapness and by its convenience of administration. Prepared by the Provident Chemical Works, this substance has received the name of Crystalline Phosphate; and its analysis, as given upon the label, shows it to be composed of the following substances.

Every gramme contains:

	Grains.
Phosphoric acid,	3.24290
Acid phosphate of calcium	4.49374
Acid phosphate of magnesia	.37062
Acid phosphate of potassium,	.26252
Acid phosphate of sodium,	.20075
Acid phosphate of iron,	.12972
Chloride of potassium,	.15750
Chloride of sodium,	.16986
Sulphate of potassium	.12354
Water,	6.26962

Mixed in these proportions the compound represents a substance of pasty consistency, which remains solid at ordinary temperature, is somewhat hygoscopic (but only after a long exposure to a very moist atmosphere), reddens blue litmus paper ; dissolves slowly in cold, readily in hot water, imparting to the solution an agreeable, tart taste. Even in dilute solution it has the effect of setting the teeth on edge.

I was first led to use this remedy by a personal experience of its efficacy in most promptly relieving the feeling of heaviness and distress incidental to indulgence in some particularly indigestible article of food. The cardialgia, the fullness and weight in the epigastrium, the metalic, pasty taste in the mouth, were all relieved within ten minutes after taking the remedy. Shortly after this, a patient, coming to the office for some local trouble, complained of the unpleasant effect of some cheese which he had taken a few hours before ; and was also benefited within a few minutes by taking the Crystalline Phosphate. In several other instances has success been equally decisive ; and in each case the patient declared himself relieved in a very short time.

Prompted by this favorable experience, I began the use of the remedy rather extensively in a number of cases in which gastric symptoms constituted a prominent feature, and, as the result of that test, have been led to the conclusion that we have in the acid salts of phosphorus remedies of fully equal value with either dilute nitric or hydrochloric acid ; in many cases the phosphorus compounds will be found superior. I gave a brief synopsis of a few cases in which its effect has been very decided :

Case I. E. S., æt. 30 years, widow, servant ; slender build ; slightly below the average size ; somewhat anæmic ; has been sufferer for past four years. Occasional attacks of excruciating epigastric pain. Constant eructations of gas with offensive odor. Almost total loss of appetite, frequent attacks of nausea, and irregular action of the bowels. Examination showed considerable dilatation of the stomach, the lower border being on a level with the umbilicus. Tenderness to pressure over epigastrium. Has had attacks of vomiting, vomited matter consisting largely of bile.

Treatment.—Daily lavage of stomach with Oser tube ; milk and beef diet ; and one drop of a mixture of equal parts of carbolic acid and tinct. iodine in half a glass of water. Later, Crystalline Phosphate was substituted, and with decided benefit. The appetite improved, the patient gained weight, and the normal color returned to lips and cheeks. She left the city after about five weeks, and I have no subsequent record of the case.

Case II.—Convalescent typhoid. E. S., æt. 25 years, married, mother of one child. Moderately severe attack of typhoid, with several very severe hæmorrhages from the bowels, by which her strength was greatly reduced. Improved slowly. No appetite. Feeling of heaviness in stomach. Appetite returned in about three days after taking Crystalline Phosphate.

Case III.—Scrofulous disease of bone. L. L., æt. 20 years. Spent several years in piney woods of Georgia on business. While living in a swampy region contracted a severe fever of malarial type, lasting for six months, and followed by appearance of hard diffuse swelling under axilla and on inner side of knee joint. Tumor of axilla suppurated and opened spontaneously; continued to suppurate for almost a year. Tumor near knee-joint was opened and found to result from fungous periostitis. Bone scraped—drainage-tubes—iodoform. Cod liver oil and Crystalline Phosphate internally. The improvement was very slow. Patient lost his appetite completely immediately after the operation. Following the use of the crystalline phosphate there was a very slight improvement in this respect, but the remedy seemed to have little or no influence on the healing process in the bone.

Case IV.—Atonic dyspepsia.—J. M., æt. 55 years, spinster. The patient is subject to hysterical manifestations, which never assume a violent form. Appetite poor and very capricious. Bowels irregular. Has some fulness in epigastrium. Order Crystalline Phosphate. Very decided improvement after two weeks.

Case V.—Recurrent typhlitis. S. R., æt. 25 years, young man of regular habits; good physique; has had three atracks of acute typhlitis, last complicated with general peritonitis. These attacks are always preceded by constipation lasting twenty-four hours or more. Since last attack very careful regulation of diet; buttermilk twice a day, Crystalline Phosphate, and regular exercise—walking and gymnastics. The Crystalline Phosphate was continued for about two months. Patient has had no trouble for more than a year past.

Case VI.—Subacute gastritis. L. S., æt. 28 years. Has had pain over epigastrium for several days. Tenderness on pressure. Vomiting of considerable quantities of watery fluid mixed with mucous and occasionally stained with bile. Does not drink liquors of any kind. Admits excessive use of coffee and tobacco. Bowels pretty regular. Complete loss of appetite. Pulse small and frequent. Face haggard. Rest in bed; milk diet; Crystalline Phosphate. After ten days mixed diet. Recovery in four weeks.

Case VII.—Acute indigestion. J. G., æt. 35 years, commercial traveler, generous liver. Following a late lunch and the taking of considerable wine the night previous, awoke in the night with pain in the stomach, intense and persistent nausea, and a feeling of general discomfort and oppression. Ordered Crystalline Phosphate and a light diet. The distress was relieved after the first dose; remedy persisted in for two days longer, though the patient declared himself well after the first day.

These cases represent but a very small fraction of the whole number of observations, but they may be taken as types of the variety of disorders in which the test has been applied. The experience gained from seventy-two cases, being the whole number in which the remedy was employed, would indicate that the best effect is obtained from the remedy when given about an hour after a meal, at the time when the normal acid element of the gastric secretion is being furnished by the mucous membrane. When well diluted, the solution is not only more palatable, but seems to act more promptly. Whether hot or cold water be employed is a point that may be left to the caprice of the patient, there being, apparently, no different results obtained with different temperatures.

The more acute cases show a more decided relief than cases of longer standing; and the most satisfactory results are obtained in the very common cases of epigastric distress occasioned by a single indiscretion in diet. In these the effect is truly surprising, particularly so to the patient, the transition from a feeling of intense discomfort to the normal state taking place with great rapidity, and not being followed by any return of the symptoms.

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PROCEEDINGS OF SOCIETIES.

KING'S COUNTY MEDICAL ASSOCIATION.

Meeting of June 4th, 1889.

The President Dr. E. R. Squibb in the Chair.

DR. STUART H. BENTON: *A Case of Epithelioma of Tongue.*—Mr. C. æt. 72 years, called at my office on February 10th, 1889, and asked me to look at his tongue, as he thought it was becoming paralyzed. I noticed an impediment in his speech, which he said had troubled him for a couple of months, with darting, shooting sensations through the tongue and down the left side of the neck. Upon examination I found the left side of the tongue extending from the tip back, about two and a half inches, in a condition of necrosis, with a hard indurated mass extending from the edge to the median line. The odor from the slough was very offensive. I suspected a malignant disease at once, and snipped off a small section with the scissors, and had it examined by a competent microscopist who reported it to be an epithelioma. Ten days later I operated on the tongue. Ether was administered and a gag, such as are used by dentists, (hard rubber), introduced between the molars well back. A heavy silk thread was passed through the tongue about an inch from the tip through healthy tissue and given to an assistant to use tention. The tongue was incised from the tip back with the scissors to a point beyond the induration, a wire ecraseur passed over the mass after relieving the attachments underneath and the whole removed. Only one ligature was required and that around the lingual artery, all other hæmorrhage being easily controlled by a compress of absorbent cotton and persulphate of iron applied thereon.

The after-treatment was simple. The diseased side of the mouth being packed with iodoform gauze and carbolated cotton, the dressing removed twice in twenty-four hours and in two weeks the wound was entirely healed, and to all appearances, the patient is to-day free from any trouble in the parts. This gentleman tells me he has had no sickness for the last thirty years, only an occasional attack of rheumatism. I can get no history of a like trouble in any member of his family, immediate or remote, and he had no evidence of struma during his life.

There are several points in this case, that interest me, and the most startling fact of all was to find such an extensive diseased condition and the patient not be cognizant of it. This man is much above the ordinary in intellect and education, which makes it more surprising. He has for many years been a hard smoker, and admits of taking an occasional glass of spirits, but never to excess. There was no glandular involvement or any evidence that the disease had made any impression on his general health. He has kindly consented to be present this evening and if any of you gentlemen desire to look at his mouth you can do so.

In removing the mass, it seemed to me that I removed more than half of the tongue in width, yet you will observe that very little is absent. This specimen which I show you is not all that was removed as some has been dissected off, and it is shrunken considerably by being in alcohol.

DR. JOHN D. RUSHMORE:

The following histories of cases are presented as having some surgical interest.

Case I. Miss I. I., æt. 19, came to the Brooklyn Eye and Ear Hospital, March 29, 1889, suffering with exophthalmos of the right eyeball of four months' duration. She had had ptosis on the same side for six months, and diplopia for three months. The globe was pushed downward and outward. Vision was good in each eye with a proper glass correcting her myopia, although there had been some slight failure of sight since the exophthalmos began. She suffered no pain in or about the eye. Pupil responded quickly; motions of the eyeball were good in every direction except upward in which direction there was decided limitation, tension of ball normal. Ophthalmoscope showed a slight neuroretinitis with her myopia. There was a firm mass above and to the nasal side of the eyeball. I could not satisfy myself that this was either movable or fluctuated; indeed, I was disposed to think the reverse. Her general and family history was good. She had been under skilful treatment outside of the hospital; but I could not learn from her the exact nature of the treatment, I felt a reasonable certainty that I had not to deal with a syphilitic trouble, an orbital abscess, a vascular growth, a meningocele, I felt some apprehension that there was a sarcomatous intraorbital growth. She was put upon iodide of potassium and bichloride of mercury internally and atropine locally without beneficial effect. On April 22, with the patient under ether I made an exploritory incision an inch in length above and to the nasal side of the globe; introduced my finger and found a fluctuating mass entirely behind the eyeball and toward the roof of the orbit. In my effort to find its limits, the sac was ruptured and a few drops of colorlen fluid escaped through the wound, when the finger was withdrawn, the partially distended sac presented in the wound and, after dissecting open the bluish surrounding membrane, a white walled cyst glided out of the wound without any assistance. The sac was very thin and contained nothing but a drop or two of bloody fluid. The wound was douched with hot water, three iron dyed silk sutures, and a few strands of similar material, for drainage, were introduced; and these were removed on the third day when the healing was complete. The globe settled back into the orbit to a marked degree, immediately; but there was a complete ptosis. There has been a gradual improvement in this symptom, and the eyeball lags a little yet in the upward direction and there is diplopia far to the left and right still. The improvement already brought about leads me to think that very much more may be reasonably expected and perhaps a complete recovery after a time.

Case II. P. R. æt. 30, boatman, admitted to St. Peter's Hospital, January 28, 1889, with tranverse fracture of right patella produced by muscular action. There was much swelling due to hæmorrhage into the knee joint. After about ten days the swelling had so far subsided that I decided to draw the fragments together by a method that, I believe, was suggested by an interne of the New York Hospital; and the results of this method of treatment were shown in patients presented to the New York Surgical Society at one of its recent meetings by its president Dr. L. A. Stimson. The dressing consisting of the approximation of the fragments by a subcutaneous strong silk suture passed through the tendon above and below the fragments. Four incisions were made about half an inch in length and parallel with the long axis of the limb; two of these on a level with the upper border of the upper fragment and a half inch to the outer and inner edge of the fragment, and two similiar incisions somewhat nearer together on a level with the lower end of the lesser fragment, a long strong needle with large eye distal end was passed subcutaneously through the tendon and across the limb from one incision to the other above the upper fragment, threaded and drawn backward in a similar manner the thread was passed from above downward along the sides of the fragments; then across the leg through the tendon of insertion and upward laterally to the first incision. The fragments were then approximated closely and the thread drawn tight and tied, the ends cut short and allowed to drop into the incision. It is necessary to have the incision so large and deep that the tightening of the thread will not produce any pricking of the skin: and the fragments must be brought as close together as possible, for it is quite impossible to tighten the suture after the first tying. It is important to have the knot very firm so that the fluids shall not soften and loosen it. In the introduction of the needle on the first time the capsule was punctured and a little dark colored blood flowed out. Iodoform dressing was applied. Suppuration subsequently took place, and the suture was removed, but not until some union had already taken place in the fragments. The patient left the hospital April 13th, with a fibrous band about half an inch in length between the fragments. I saw him about a week ago; he has laid aside his cane and is at work again with the motion of the joint being gradually restored. The advantage of this dressing is that it is extra-articular and avoids the risks of the wireing operation, and if suppuration occur that is also extra-articular. It also brings and holds in apposition the fragments, as in wired cases and where Malgaigne's hooks are used, and as no other dressing will where traction is made on the skin overlying the fragments. While it is a useful addition to our methods of treating fractured patella, I should still prefer in nearly all recent cases Malgaigne's hooks.

Case III. (Hospital Notes). Charlotte Hilton, English, æt. 36 years; married; housekeeper; admitted to Brooklyn Hospital, April 7, 1888, seeking relief from a bronchocele which is causing her much suffering by nearly choking her at times. It has existed since the birth of one of her children several years ago, but has never troubled her much until the last two or three months. The enlargement is mostly on the left side, about the size of a small hen's egg, but occasionally the whole gland enlarges and presses on the trachea. Applications of iodine have done her no good. Now she comes for operation.

April 13th. Injected ʒss fl. ext. ergot into gland, but the puncture caused such a spasm that it had to be stopped.

April 21st. Patient was etherized, and an incision made in the median line of neck, with the intention of doing Jones's operation of taking out the isthmus. When the gland was reached, it was found that the enlargement took in the isthmus, and it was deemed advisable to extirpate the whole left lobe of the gland, which was done. On examining the tumor there was found a crescentic, hard mass, occupying the situation of the isthmus, and lying closely attached to the trachea. This mass was subsequently found, on microscopic examination, to be a true bony degeneration. The wound was sutured and a drainage tube inserted; dressed with iodoform and cheese-cloth. About two hours after the operation the dressings were soaked through with blood; they were removed, and the wound washed with bichloride, 1-4000, hot. The hæmorrhage ceased, and the subsequent history of the case was uneventful, complete relief from her distressing symptoms following the operation. She left the hospital on May 19th.

Case IV. Louis K., æt. 4, U. S., admitted to Brooklyn Hospital, December 12, 1885. Gave a history of fall on right knee three months before admission, with inflammatory symptoms during that time. On admission the knee is swollen and hot, and motion is somewhat impaired and painful. The patient is anæmic. The febrile and inflammatory symptoms gradually subsided, and with the limb in plaster splint and general supporting measures, he was discharged August 12, 1886, as cured. Twice since that date he has been admitted to the hospital, and after a brief stay discharged improved. Readmitted January 12, 1889, with the knee very much enlarged, motion impaired, very little pain. The outer femoral condyle is tender and apparently enlarged; there is a fluctuating swelling posteriorly and laterally above condyle.

February 7th. Arthrectomy was performed. A suprapatellar (Hahn's) incision was made, all the diseased soft tissue removed; a carious mass removed from outer condyle about a half inch in diameter; the abscess cavity posteriorly opened, and counter opening made above and to the outer side of thigh; the cavity carefully curetted; short drainage tubes introduced into abscess cavity, and outer and inner angle of primary incision; the limb placed in plaster splint. Slight febrile movement followed.

February 24th. Temperature 103°. Dressing removed, and drainage tube found stopped with a blood clot. Dressing reapplied, and the subsequent history was uneventful.

Dressings were finally removed April 25th.

May 26th. Buck's extension applied to overcome some tendency to flexion of knee.

June 3d. The extension has had an appreciable effect. As the joint will ultimately be stiff, it may be necessary later to tenotomize the hamstring tendons.

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REVIEWS.

A MANUAL OF CHEMISTRY FOR THE USE OF MEDICAL STUDENTS. By Brandreth Symonds, A. M., M.D., Assistant Physician to Roosevelt Hospital, Out-Patient Department; Attending Physician Northwestern Dispensary, New York.

The scope of this manual is distinctly stated in the title. It is written with a special view to medical students, and is not intended as a text-book on medical chemistry. The author states his indebtedness in the preparation of this work to the lectures of Prof. C. F. Chandler, of New York.

Both inorganic and organic chemistry are included in its range. The description of the elements is methodical, concise and accurate. The arrangement of the matter is good, and here the author has shown as much originality as his subject permits. The department of organic chemistry is perhaps a little too brief for satisfaction. The arrangement of the different tests for agents in a separate chapter is a wise thing, and very advantageous for the student. The chapter on the atomic theory is likewise too brief to be altogether satisfactory; a little more discussion of the theory would render this chapter more valuable and in no respect tiresome.

The author's statement of the difference between isomerism proper and metamerism is not altogether clear. To say that in isomerism proper "the compounds differ only in their physical properties" is begging the question. It is very evident to any one that the oils of lemon and turpentine differ in physical properties; for instance, each has a distinctive taste and odor.

Having adopted this form of differentiation, it should have been stated that urea $(N H_2)_2$ Co, and $N H_4$ Cul, ammonium cyanate, examples of metamerism, do or do not differ in their physical properties, for in both isomerism proper and metamerism the compounds have the same constituents in the same combining proportions, and it is impossible for us to conceive of such compounds being different, one from another, atomically except by virtue of different arrangement of the atoms, just as two different houses, unlike in structure, may be built of the same number and same amount of materials.

The tests for the constituents of the urine, normal and abnormal, are clear and well arranged. The author states that the best test for atropine is the physiological test. There are a number of agents that dilate the pupil; this test is therefore in nowise distinctive of atropine alone. When a pupil is dilated by an agent, all that can be safely decided is that the agent is a mydriatic. The dilatation produced by cocaine and that produced by atropine differ considerably. The dilatation produced by cocaine is not a maximum dilatation, except when the drug is used in liberal quantities internally, or has been instilled into the eye in strong solution with great frequency. Moreover, a pupil that is dilated with atropine does not respond to light, and the accommodative muscle is more or less paralyzed. A pupil under the influence of cocaine will always respond somewhat to light, and the accommodative muscle is not effected, except in a very light degree by cocaine.

The statement that "cocaine, unless in sufficient strength to cause anæsthesia, will not produce mydriasis," seems to us to have no value as distinguishing an atropine mydriasis from a cocaine mydriasis. When the author says that the so-called daturine is simply a mixture of atropine and hyoscyamine, he probably means the agent that is sold as daturine. He cannot mean that there is not a mydriatic agent, an alkaloid, in the datura stramonium. If so, he is not familiar with "Jamestown weed."

The book is neat and handy, in good type, and accurately printed. On the whole, it seems to us to be exactly what a student needs, and it might well serve the practitioner, who learned chemistry under the old system, a good turn.

DISEASES AND INJURIES OF THE EAR: THEIR PREVENTION AND CURE. By Charles Henry Burnett, A. M., M.D. Philadelphia: J. B. Lippincott Company. 1889.

This book is one of the series in "Practical Lessons in Nursing" brought out by this well-known publishing firm. The author succinctly states in his preface that the book is not intended as a discussion of all the therapeutic measures employed in the treatment of ear diseases, but is intended rather for the eyes of the inexpert and layman, in the hope that it may point out the dangers that result from injudicious and meddlesome treatment of ear diseases.

To tell what not to do, rather than what to do, is the gist of the author's purpose. After a careful perusal of the book we conclude that the author has stuck well to his text; the advice given is sound, logical and practical.

The methods described could be understood and carried out by any sensible layman. The first two chapters, on the anatomy and physiology of the ear, are clearly written, and make a very good foundation for what follows.

The last two chapters, on the aural education of the partially deaf and the education of the deaf and dumb, will be interesting to laymen, but possess very little practical value; still, if they succeed in inducing parents of apparently deaf and dumb children to watch more closely for signs of comprehension from such children through the medium of the ears, they may be of service, for it certainly happens at times that very deaf children become dumb through a lack of practice in speaking.

It is surpising that the author places so much value on the worthless otophone of Maloney. In view of the purpose of the author, it is difficult for any other than a captious critic to pass an unfavorable opinion on this little book.

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OUR LIBRARY TABLE.

THE GALVANIC TREATMENT OF FIBRO-MYOMATA. By A. H. Buchmaster, M.D. Prize Essay of the Alumni Association of the Long Island College Hospital for 1888. Reprint from the *Brooklyn Medical Journal.*

The author claims that by the galvanic treatment all the symptoms are at least ameliorated, the pain is checked, the hæmorrhage is stopped, and the tumor is diminished in size or even entirely disappears. He thinks that the hæmostatic effect of the positive pole is due to its cauterizing the tissues. Two methods are described of applying galvanism to fibroids: 1. By puncturing the tumor by one or both electrodes through the abdominal wall. 2. By Apostoli's method. He strongly advises against the first method, and considers it very dangerous. He then describes Apostoli's methods and the instruments necessary for an accurate and steady current.

Does Inebriety Conduce to Longevity? By Norman Kerr, M.D., F. L. S.

This paper was written to expose the misapplication of statistics collected by members of the British Medical Association as to the connection of disease with the habit of intemperance.

"The Sixteenth Regular Report of the Medical and Surgical Staff of St. Francis Hospital, Jersey City, N. J." 1888.

"Eleventh Annual Report of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, M. D." 1888.

"An Œdematous Form of Disease of the Upper Air-Passages." By Wm. C. Glasgow, M.D., of St. Louis.

"Acute Multiple Adenitis (Septic?); Œdema of the Larynx, with Spontaneous Cure; Laryngoscopic Appearances." By Samuel W. Langmaid, M.D., of Boston.

"Some Points in the Pathology and Treatment of Diseases of the Nasal Pharynx." By John N. Mackenzie, M.D., of Baltimore.

"Three Rare Cases." Illustrated. By George M. Lefferts, M.D., of New York.

"The Treatment of Diseased Tonsils when Unattended with Hypertrophy." By John O. Roe, M.D., of Rochester.

"Dysphonia Spastica." By Frederick I. Knight, M.D., of Boston.

"Memorandum of a Recurrent Laryngeal Growth, Appearing Twenty-two Years After Removal." By Rufus P. Lincoln, M.D., of New York.

"Hæmorrhage From the Larynx." By Wm. Porter, M.D., of St. Louis.

PHARMACY AND THERAPEUTICS.

Antipyrine and its Substitutes.—We are frequently in receipt of inquiries of which this is an average text:

"Have you analgesine (or methozin) and what is it worth per ounce? We do not mean antipyrine, or antifebrine, or acetanilid, but the analgesine recommended by the French authorities (or methozin, urged by writers in some western medical journals) as a substitute for the antipyrin. Please give us price per ounce."

Antipyrine is a chemical compound, shrewdly protected as fully as the laws of the United States will shield any proprietary rights of whatever nature. Not only the name is protected, but the product itself, through the process for its manufacture, is patented, and consequently any substitute purporting to be chemically identical is an encroachment on the rights of the patentee, and the promulgator and holder of the substitute is liable for damages and the stock is forfeitable on demand.

Analgesine is manufactured and sold in France exclusively, and its existence there is due only to conditions in the patent laws differing from those of other states. At the same time antipyrine is also manufactured in France by a French firm, who are under contract with the German holders of the universal patent, and the name is thus protected even there, although the product is not patented.

Methozin is an arbitrary name, a contraction from the full chemical name of antipyrine, and as fanciful, if not quite so unscientific, as antipyrine; the only advantage it nominally possesses is that the author of its coinage has not legally protected it for its own use. We consider it reprehensible, under the circumstances, to continue the propaganda for this name, methozin, as it but tends to confuse many minds not clearly conceiving the exact status of the case, and its use, even if widely adopted, would serve no practical purpose.

In a sentence, therefore, antipyrine has no actual substitutes of the same chemical composition; the name methozin has no right to exist, as it represents no actual substance except the antipyrine manufactured and sold by the patentee; and, finally, analgesine is made and sold in France only, and if it were attempted to import the article into this country the shipment would be forfeited by the custom's officials, and destroyed or returned, under favorable decision, to the shipper in France.—*Notes on New Remedies*, Lehn & Fink.

THE PRESENT ASPECT OF THE IODOFORM QUESTION.—The triumphant march of the germ theory received some four years ago an unexpected and, it seemed at that time, a final check. Just when it seemed to have been surely determined that unhealthy action in wounds was caused directly by the entrance of disease germs from without, and that the exclusion and destruction of germs would secure rapid and normal repair, the startling discovery was made that iodoform, which was widely used as an antiseptic, and which evidently promoted greatly the healthfulness and healing of wounds, was not a germicide, and might in fact be the vehicle in which germs were carried into the wound. In an article in the *Annals of Surgery*, March, 1889, Dr. Van Arsdale discusses the matter fully, showing what interesting discoveries have resulted from the refusal of iodoform to fit into the old theory, and giving the literature of the subject.

Investigation has proved that disease germs are aided in their septic work by certain chemical substances called ptomaines, which are formed in the tissues as a result of their action upon the tissues. Iodoform, while it does not destroy nor seriously hinder the germs, does destroy the ptomaines. Thus, we may suppose, the tissues, not being enfeebled by the action of the ptomaines, are enfeebled either to destroy the germs or to resist their malign assaults.

Clinically, certain facts have been developed which are of practical value, whatever may be the fate of the scientific theories involved. In dressing wounds the surgeon must hereafter use two different sets of antiseptics. He must first seek, as far as possible, to exclude disease germs or to render them inactive, and for this purpose he must use germicides, such as corrosive sublimate. He must next endeavor, by applying agents like iodoform, to prevent the formation of poisonous chemical substances in the wound, or to decompose them and render them inactive if once they have been formed. These latter agents, if they, like iodoform, contain disease germs, must be disinfected before they are applied. Iodoform should be washed in corrosive sublimate solution. It should be brought into as intimate contact as possible with the surface of the wound, and after its application the wound should be covered with germicide and protective dressings.—*Medical Record*, April 27, 1889.

DIGESTIVE FERMENTS IN THE INTESTINAL DISORDERS OF INFANTS.—It seems somewhat strange, with our present knowledge of digestive ferments, that the application of pancreatin and pepsin in the diarrhœas and intestinal disorders of children, especially those arising from inanition, is not more general.

We believe that an extension of the use of these products in such diseases would not only prove advantageous to the practitioner, but save the lives of many little ones that otherwise would be doomed.

No practitioner, possessed of a modicum of therapeutic and physiological knowledge, will be found to admit that chalk mixtures, opiates, astringents, etc., meet fairly the indications in these cases. The antacids act merely mechanically, soothing the irritated mucous coat of stomach and intestines; the action of opiates which are especially dangerous to administer to nurslings, is uncertain, for it is impossible to guage their use so as to attain the exact limit essential to intestinal anæsthesia and arrest of peristaltic action, without narcosis; and astringents, while repressing secretion, at the same time retain and favor the absorption of ptomaines and other poisonous products which have provoked the flux—they limit the dejections at the expense of non-elimination of the toxic.

In such cases, and in all those of enfeebled digestion and in which the food remains undigested and fermenting in the stomach and intestines, pepsin and pancreatin and peptonized foods, afford us pure and simple physiological remedies, whose administration is attended with no dangers; and their employment does not preclude the use of cathartics, or administration of antiseptics that are anti-toxic to ptomaines.

Recently we have obtained the best results from such treatment, though it must be admitted in cases of unusual gravity, when collapse threatens, that coto and wild yam are sometimes of value to check the flux, the digestive ferment following to secure proper digestion and nutrition. So long ago as 1856, Joulin Corvisart (*Rev. Med. Chir. de Paris*) outlined this mode of treatment, and claimed the happiest results therefrom; and more recently it was advocated by Trousseau, Pidoux, Barthez, and Rilliet, of France, and Ellis and Davidson of the United Kingdom. Later still, Dr. J. Milner Fothergill (Handbook of Practice, p. 40) remarks of pepsin: "Its utility in the treatment of imperfect digestion, and diarrhœa in children, is certain." Prof. J. Lewis Smith (Prof. Dis. Children, Bellevue Hosp. Med. Coll.—Archiv. Pediatric, 1866, p. 518) expresses exactly the same opinion. Prof. Frederick John Farre (Parieras Mat. Med. and Therap., p. 943) commends pepsin "*very highly in cholera infantum and summer complaints of children.*" And Bartholow declares (Mat. Med. and Therap., p. 68): "Very great success has been attained in the treatment of the *diarrhœa of infants* by pepsin. * * * The motions will be quickly changed in character, and the nutrition of the child improved, by giving it immediately after each supply of food." He further recommends (Naphey's Medical Therapeutics, p. 395) the employment of peptonized milk or milk gruel for food in these cases, in which he is supported by Wilson Fox (Diseases of Children, ii, p. 821), who considers "pepsin invaluable in gastralgia and all irritative states of intestinal and stomach mucous membranes."

With such evidence, and with the physiological knowledge that at present obtains, it is evident the digestive ferments are too little studied or employed. Yet we must admit there have been good grounds for such neglect, in that the pepsins upon the market, for the most part, have been untrustworthy, and with no definite guide for testing, that of the U. S. P. being of a very low standard. These objections no longer obtain, however, for manufacturers have been led to provide accurate tests, and now disseminate the same in their literature. Thus we find Parke, Davis & Co. issue a work on Digestive Ferments, that is accurate in all details, and further they have placed upon the market, a new pepsin of higher digestive power than any heretofore introduced, and possessing the exceptional advantages of being absolutely *free* from ptomaines, readily soluble, and of a digestive power hitherto unattained. Moreover, the standard of pepsin has been raised by the better manufacturers, and it is the practitioner's own fault if he is not able now to secure a preparation suited to his needs.

SULFONAL AS AN HYPNOTIC IN INSANITY.—In an article on Sulfonal as an hypnotic in insanity, Dr. Samuel Garnier, in the *Annales Medico-Psychologiques* for January and March, 1889, reports at length upon its action in seventeen cases, and concludes that:—

I. Sulfonal is an hypnotic of most remarkable intrinsic value in cases of insanity. In nearly every case of insomnia sleep was produced by doses varying from two to five grammes.

II. It proved efficacious in cases in which paraldehyde, urethane, chloral, and hypnone had invariably failed to act.

III. The advantages of sulfonal in the insomnia of the insane are: the nature and amount of sleep procured by the doses mentioned; the facility in administering the drug by reason of its freedom from taste and odor, and also the fact that it has no appreciable effect upon the respiration, circulation, or digestion.

IV. It should be stated in regard to its action upon digestion that as in 5.5 per cent. of the cases it excited vomiting and in 17.7 per cent. slight diarrhœa, its use is contra-indicated when these phenomena appear.

V. The use of sulfonal is sometimes attended with vertigo and difficulty in keeping the equilibrium, the patient appearing in this respect as if intoxicated. It may possibly be contra-indicated in the congestive forms of insanity.

VI. The fact that it had a diuretic effect in 17.7 per cent. of the cases should be borne in mind when administering it.

VII. Its calmative action by day is wanting even after a large dose, and if produced it is usually only a somnolence induced the day following the administration of the drug, a condition it is well to avoid by reducing the dose.

VIII. After divided doses, in the single instance in which it was so administered, no sedative effect resulted by day and scarcely any at night.

IX. About one-half of the cases to which sulfonal was administered only on alternate days were comparatively restful during the intervening nights.

X. In sane subjects, sulfonal appears unquestionably to provoke and prolong sleep as well as to render it more profound. The phenomena attending its use are few and of little consequence. It is indicated in all cases of nervous insomnia.

Opium as a Hæmostatic.—A case of severe bronchial hæmorrhage came to the notice of Dr. Huchard, which, in spite of most active treatment, had continued for some time. He used ergot, injections of ergotine, sulphate of quinine, ipecac and other remedies without avail. Finally he tried injections of morphine, four or five times daily, in 1-12 grain doses. The hæmorrhages ceased entirely after the first day of treatment. Dr. Huchard has since tried the drug in cases of uterine hæmorrhage and too copious menstruation, always with marked success.—*Journal de Méd. de Paris*, April 21, 1889.

Laxative Powder.—Dr. Dujardin-Beaumetz recommends the following as a pleasant and reliable laxative:

℞.—Powdered senna pods (treated with alcohol)	āā ʒjss.
Sublimate of sulphur	
Powdered fennel	āā grs. 48.
Powdered star anise seed	
Pulverized cream of tartar	grs. 31.
Powdered licorice	ʒij.
Powdered sugar	ʒvjss.

Dose: One dessertspoonful of the powder in a half wineglassful of water at night.—*L'Abeille Médicale*, April 27, 1889.

Local Application of Pepsin.—Dr. H. B. Douglas has found pepsin a most valuable application for indolent ulcers. It gives a healthy appearance to the sore, and promotes rapid healing. He uses it with lanolin in the following combination :

℞.—Pepsin	48 grains.
Lanolin	ʒjv.—M.

—*Revue de Thér. Méd. Chir.*, May 1. 1889.

Strophanthus Hispidus—*Its Action Upon the Heart.*—Drs. Weidman and Rosenbush give the following action of Strophanthus :

1. It increases the systolic force, prolonging the latter ; augments the tension of the arterial vasa, and decreases the heart's action.
2. It strengthens the cardiac muscle and regulates the heart's work.
3. It has some diuretic action as well in heart and kidney affections.
4. It does not disturb digestion as other heart poisons (for example, digitalis) do.
5. No symptoms of cumulative action arise from its use.
6. There is less compensational disturbance from its use than is found in digitalis.
7. The best form for use is the alcoholic tincture, which contains all of the bitter glucosides of the drug.
8. In stenosis of the aortic valve its action is negative. As it does not materially prolong the systole, it gives little relief in this disease.—Dr. Proell, *Allg. Hom. Zeit.*, cxviii., No. 8.

WHOOPING-COUGH.

℞.—Powdered belladonna root	gr. 1-5.
Dover's powder	gr. ss.
Sublimed sulphur	gr. iv.
White sugar	gr. x.

M. Sig.—Take in one dose from two to ten times a day, according to age of patient and effect produced.—Germain SEÉ, *Journal de Medécine.*

CHILBLAINS.

℞.—Lin. belladonæ	ʒij
Lin. aconiti	ʒj
Acidi carbolici	*m*vj.
Collod. flexil	ad ℥j.

Mix, and apply every night with a camel's-hair pencil.

℞.—Collod. flexil	ʒiv.
Olei ricini	ʒiv.
Spt. tereb.	ʒiv.

Use two or three times daily.

℞.—Spirit. camph.	ʒij.
Tinct. opii	ʒij.
Acid. carbol.	gr. xl.
Spirit. vini	ʒiv.
Aquæ	ʒiv.

—*British Medical Journal.*

HYPERIDROSIS OF THE FEET.

℞.—Tr. ferri muriatis	℥ij.

Apply to soles of feet and between toes on retiring.

℞.—Chloral hydrate	℈ij.
Aquæ	℥j.

Apply as above.

℞.—Potassii permanganate	℈ij.
Aquæ	℥ij.

Apply as above.—DR. LE ROY DIBBLE, of Kansas City, Mo.

CHRONIC CYSTITIS IN WOMEN.

Dr. W. S. Brown recommends an injection into the bladder every night and morning:

℞.—Benzoic acid, pure	℥ij.
Biborate of soda	℥iv.
Distilled water	℥vj.—M.

BISMUTH OINTMENT FOR FRECKLES.

℞.—Subnitrate of bismuth	ʒij.
Simple ointment	℥ij.

Apply to the skin at night and remove in the morning, with a little cold cream previous to washing.—*Druggists' Circular and Chemical Gazette.*

LOTION FOR SUNBURN.

℞.—Citric acid	ʒij.
Pure sulphate of iron	gr. xviij.
Camphor	gr. ij.
Elder flower water	℥iij.

—*Druggists' Circular and Chemical Gazette.*

FISSURES OF THE TONGUE.—These obstinate and painful lesions may be speedily cured, according to Schwimmer, by applying the following mixture five or six times daily:

℞. Papayotine		2 parts;
Glycerin, aquæ.	āā	10 " M.

—*Revue de thérapeutique*, Oct. 15, 1888.

SANITARY.

SANITARY MEASURES. By H. S. Orme, M.D., Professor of Hygiene in the College of Medicine of the University of Southern California, Los Angeles, Cal.

The State Board of Health congratulates itself upon a considerable success in its efforts to promote the sanitary condition of our State through legislation enacted at the session lately ended at Sacramento. Vaccination has been made a prerequisite for admission to the public schools throughout the State; all towns of 500 inhabitants and upward must have sanitary organizations; and hereafter no interments of human bodies can take place without a certificate of the cause of death from a physician or legally authorized person. It has been decided to enforce these measures strictly, and it is hoped that they will bear good fruit.

The following important objects failed: A bill to have the waters of all the mineral springs of the State analyzed by the State Analyst, and an appropriation to carry out the analysis properly; a bill for the prevention of adulteration of milk, etc.; a bill to regulate the practice of veterinary medicine and surgery; one to provide for the appointment of a State Veterinarian; and last, but not least, a bill for the appointment of a State Sanitary Inspector.

This last subject, in my judgment, merits particular notice at the present time. The Board of Health became convinced, during the past year, of its positive need of such an officer, to enable it to carry out effectually the objects of the act which created it, and which are to be found in Section 2979 of the Political Code. In case of prevailing disease of whatever nature in any part of the State, or of threatened invasion of contagious disease from abroad, his services would be of urgent need; and at other times he would be usefully employed in travelling over the State to inspect public buildings, to make a sanitary survey of the most important portions, to labor for the enforcements of the sanitary statutes, and to awaken in all communities an interest in public hygiene. It is greatly to be regretted that the public must wait two years longer for the fulfilment of these advantages, but it is reasonably certain that the necessary legal authority will not be delayed later.

It is proper to observe here that our State is threatened this year with foreign pestilence of different kinds and from various quarters. Yellow fever is permanently planted on the Isthmus of Panama, which has constant and free maritime intercourse with the ports of this State. That we have so long escaped its introduction by sea is due rather to good luck than good management. Fortunately merchandise brought from the Isthmus is not packed there, and the brief period of transit does not allow it to become infected. The same is true of the personal effects of travellers crossing that narrow territory. But it is evident that persons residing at either Colon or Panama, and packing their trunks in an infected atmosphere, might carry the germs of the disease along without falling sick themselves. Admitting that the fever could not gain a foothold on our coast, owing to the prevalence of the cool and strong ocean winds through the summer season, we must acknowledge that the hot towns of the interior could hope for no such exemption. The door is open and the enemy may come some unexpected day. Another avenue is by the Mexican port of Guaymas, from which place two fatal cases of yellow fever actually reached Los Angeles in August, 1885. The alarm which was experienced in this State last year from the prevalence of yellow fever in Florida and its extension to Alabama and Mississippi is not yet forgotten. Two successive seasons have witnessed its outbreak in Florida, with a survival of the infection over the intervening summer. Last winter was exceptionally mild, and it is highly probable that the fever will reäppear earlier in 1889 than it did in 1888. Yellow fever is now having a period of unusual activity. It has raged for two years at Demarara, British Guiana; it is particularly destructive this season at Rio de Janeiro; and it has lately been reported at one of the northern ports of Peru. Should the fever extend northward along the coast of Central America and Mexico the present season, California will be seriously endangered through Guaymas, which is connected by railroad with all parts of the country.

So much for yellow fever. And now a few words upon diseases of domestic animals: The limited investigation made in 1888 by Mr Salmon, of the National Bureau of Animal Industry, by Drs. Thos. Bowhill and Carpenter, skilled veterinarians, and by Dr. S. S. Herrick, employed as a temporary Sanitary Inspector by the State Board of Health, showed that anthrax has gained permanent posession of numerous tracts of grazing land in many counties of this State, and that the most energetic sanitary measures are needed to prevent its spread to other territory, and to extirpate the infection from the soil where it has been planted. This work alone is of sufficient importance and magnitude to employ a sanitarian during most of the present season to hunt up these poisoned tracts of land, to persuade the county authorities to use the necessary measures to destroy the infection by fire at the proper time, and to superintend the work.

The State Board of Health has available for the exclusion of foreign pestilence from the State most of the sum appropriated by the Legislature in 1887, subject to the approval of the Governor. Whether he would allow the Board to use the money for the purpose designated is questionable, since he has seen fit to refuse approval of the bills providing for a State Sanitary Inspector and State Veterinarian; but in my judgment the Board should call for the funds when occasion demands, and then the responsibility would be removed from their shoulders. Whether the Board could lawfully use any part of this fund to investigate and suppress animal diseases already existing in this State, I am not at present prepared to say. In 1888, their Sanitary Inspector was engaged for a short time in this duty, and the question should be settled, whether they have authority to resume this particular work. If the answer should be affirmative it would then be in order to obtain the consent of the Governor. As to the utility of this course I have not the slightest doubt on sanitary and economic grounds.

There are several other important matters demanding legislation in this State, which we may discuss at some future time.

INFECTION BY BOOKS.—In many of the European cities extensive investigations are making to prove or disprove the infectiousness of books handled by the sick, such as must of necessity frequently occur in large circulating libraries. The editor of the *Christiania* (Norway) *Sanitary Journal*, in commenting on the subject, remarks that it is the universal pastime of invalids and convalescents to read or look over books, which if not procurable at home are brought from some library. Even children are fond of looking at picture books, and the editor relates the following personal experience:

"In 1846 an eight year old brother of my wife was taken down with scarlet fever and died. During his illness he frequently amused himself by looking over a large picture book. This, together with several other of his useful playthings, was packed away in a chest after his death. Twenty-six years afterward, in 1872, a sister-in-law of mine journeyed across the Channel to England, where I was then residing, and with her came the chest and the picture book. On the second day the chest was opened and the book presented to my two year old son. Within the next two weeks the little fellow was taken down with scarlet fever. The doctors who were called in consultation wondered how the disease was contracted, as there had been no scarlet fever in the town for years. The circumstances of the book were called to mind, and the indications were clearly that the twenty-six year old book had retained the poison and communicated it to the child."

The process of disinfection now in use in Denmark and Norway in many of the circulating libraries and book stores is a good one, and it is claimed to disinfect the books without damaging them in the least. It consists in placing the books fully opened out in a suitable compartment and subjecting them to dry hot steam at a temperature of over 100° C. for several hours.—WINSLOW ANDERSON, M.D., *Pacific Medical Journal.*

MISCHIEF-MAKERS IN MILK.—According to Vaughan, tyrotoxicon does not develop below 60° Fahr., and is anærobic—grows when air is excluded. Some very simple measures, then, are preventive:

1. Scrupulous cleanliness. A little dry milk on the rim of a can or vessel may breed the germ which will find a culture-ground in fresh milk.
2. A low temperature—below 60° Fahr.
3. Ventilation in an untainted atmosphere.

It is but just to say that these precautions are generally observed by careful dairymen and cream manufacturers. There is grave reason to fear, however, that they are not generally observed after the milk reaches the consumer's hands. Also, the slightest carelessness may affect seriously that class of the community which does not speak for itself—the very youngest.

Statistics prove with increasing testimony that *all* artificial feeding is not only unnatural but hazardous, and to be successful requires the most intelligent attention. However, if all mothers and nurses could learn that milk exposed to foul or warm air for any length of time may not only sour, but become the vehicle of a virulent poison, perhaps the summer months would bear a better health record.

One word of warning may not be amiss. Whenever a young child is fed upon cow's milk, and this causes symptoms of disagreement, the diet should be changed at once either to meat or rice; for if the chief mischief-maker be at work, the best milk will only furnish it with the medium in which it flourishes, and, deprived of this, it will inevitably perish.—*Popular Science Monthly.*

CORRESPONDENCE.

In a letter from Vienna to the *North-western Lancet*, Dr. G. A. Renz says : I had the pleasure of witnessing the other day another stomach operation by Dr. Billroth. It was a case of suspected carcinoma, but proved to be a large lump of cicatrix from an old ulcer, situated near the cardiac end. Dr. Billroth simply excised a triangular piece, including the whole lump, and sewed the stomach up again. The patient is now perfectly well.

I also saw him operate on strangulated hernia twice, with gangrene. He resected the gut in both cases, sewed the two distal ends together, and dropped them into the abdominal cavity ; both patients recovered. His assistant operated a few days ago on a carcinoma cervicis, extirpation per vaginam, recovery. His results are due, I think, largely to the perfect antisepsis carried out, and the thorough cleanliness of his wards, which are the neatest and cleanest I have ever seen. His clinic is a poor one, but perfectly clean ; he has just now made an application to the government for a better one, and I hope he will get it.

I might here append a few methods of treatment which I have learned and which are not well known at home. One of the most important is, I think, the treatment of cold abscesses and tuberculous processes of all kinds which can be surgically treated. The cold abscesses, if from the neighborhood of abdomen, spine, etc., are aspirated and filled with a ten per cent. solution of iodoform in glycerine,

—I should say mixture, not solution. I saw Billroth slit open a tuberculous cold abscess on the thigh and leg, to the length of 10 inches, fill it up with the above, close it up perfectly ; result, a healing by first intention. So tuberculous caries is treated by opening, scraping out dead bone, filling with iodoform glycerine, and closing the wound. I have seen a patient operated upon in this way in half a dozen places during one operation, and every wound healed by first intention. Resection of the ribs for old pleuritic effusion is a common operation here, and mostly successful. For a large amount of effusion in a case of tuberculosis of the mesentery, abdominal section is performed, the fluid evacuated, the cavity washed out and the wound closed. The patients recover wonderfully after this treatment, and are much better for it.

I cannot attempt to note down here the many bits of information one gets with this most perfect surgeon, but it will not be amiss to note down his simple yet effective antiseptic treatment of wounds. For bandaging the cheapest material is used, usually calico almost as thin as gauze ; this is used but once and then thrown away.

The usual dressing consists in iodoform gauze directly on the wounds. If the wound is one with a cavity, it is filled with the same, then a layer of crinoline gauze ; on top of this, if a large amount of compression is needed, a bag of wood wool, then a bandage, finally a starch bandage to keep everything in place ; this is the every day dressing. Bandages, crinoline and wood wool bags are sterilized at 100° C. in an oven.

The iodoform gauze is prepared as follows for 10 meters of gauze :

℞	Iodoform, - - - - -	50.0
	Glycerine. - - - - -	100.0
	Alcohol, - - - - -	700.0

M. and squeeze out the gauze in the solution, having first thoroughly cleaned the hands and sterilized the gauze by heat. If you wish the sticky variety some tannin is powdered on it. No sponges are used at the operation, but compresses compared as follows ; 15 thicknesses of cheese cloth are wound together ; these are boiled for two hours in bichloride solution, 2-1000, and kept in the above solution. They are handed from thymol 1-1000 in laparotomies, for all other wounds from the sublimate solution. These may be used again after soaking in hyposulphide of soda solution, three changes half a day each, and boiling again two hours in the sublimate solution. Cloths boiled in sublimate are also used to cover the body; the spray is discarded here.

Silk is mostly used here ; catgut very rarely. The silk is prepared by boiling for one hour in bichloride solution, 2-1000, winding on sterilized spools and keeping in the same solution.

To prepare catgut, scrub with soap and water, soak for twenty-four hours in a two per cent. alcoholic solution of corrosive sublimate. It is then transferred to a 1-1000 alcoholic solution and kept in the same. Instruments are handed from a two and one-half per cent. carbolic acid solution. Drains are also sterilized in a 1-2000 corrosive sublimate solution and handed from the same. In case of laparotomies the instruments are kept twelve hours before the operation in acid. carbol., 450.0, glycerine, 3,000, to make them thoroughly antiseptic. Hands are washed in soap and water, then in alcohol, then in a 1-1000 sublimate solution; particular stress is laid on the alcohol.

Chloroform is used here in the following formula:

℞ Chloroform,	100.0
Alcohol,	30.0
Ether,	30.0

It acts very nicely.

As a wet dressing for swellings, etc., the following is used:

℞ Alum,	10.0
Acetate of lead,	50.0
Water,	1000.0

As a stimulating salve for granulating wounds:

℞ Argentinitratis,	1.0
Balsam. Peru.,	2.0
Ungent. simp.,	100.0

Wounds too large to heal by granulation are allowed to granulate for a few days, then thin shavings of skin taken from an arm are placed upon the wound, entirely covering it, and covered with rubber paper and dressed; they usually heal very nicely. These grafts are shaved off with a sharp amputating knife, in long strips, just cutting the tops of the papillary blood vessels off; in other words, simply going through the epidermis.

I could write you a great deal more, but this includes about all of the general treatment of wounds at the Billroth clinic, and certainly gives most excellent results.

I shall leave here January 15 for Berlin, where I shall work bacteriology with Koch, pathology with Virchow, gynæcology with Martin, and surgery with Bergmann.

Vienna, December 15, 1888.

NEW IBERIA, LA., *June* 12, 1889.

Editors GAILLARD'S MEDICAL JOURNAL:

In the last issue of your JOURNAL, Dr. P. G. De Saussure, of Charleston, asks: "What is the cause of ulceration of the *duodenum* in cases of burn?" I have just been reading a little work on post-nasal catarrh, by Woakes, and find in the course of his "introductory observations on the correllating and reflex functions of the sympathetic system" the following: "No better instance of this sort of reflex action, so distributed as to constitute a correllated tissue tract, can be afforded than is seen when burns of the chest are followed by a duodenal ulcer. Here the afferent sympathetic fibrillæ, associated with the injured cutaneous spinal nerves implicated in the burnt integument, are in reflex relationship, through their ganglion, with the *nervi vasorum* of the arteries supplying the duodenal mucous membrane, though the evidence in this case goes to show that the impulse is in its issue one of vessel contraction rather than of dilatation, the resulting ulcer being a tissue necrosis, the sequence of starvation from this reflexly-excited obliteration of its blood supply."

Yours truly, THOMAS J. WOOLF, M.D.

(*Translation of letter from Brazil.*)

TO DR. J. MCFADDEN GASTON.

Rio, *May* 3, 1889.

My Dear Dr. Gaston:—I have the pleasure of communicating to my friend that the epidemic which prevailed this year, one of the most violent which we have had, offered an opportunity for one more decided proof of my preventive inoculations. Not only here in Rio de Janeiro, but also in Nitherohy, Desenzano, Santos, Vassouras, all of which places were afflicted by the epidemic, the result was splendid.

In Santos and in Desengano, where hundreds of people were vaccinated, there did not occur a single unsuccessful case. In Nitherohy, among two hundred or so persons inoculated this year, without counting the more than four hundred inoculated in previous years, there was only one unsuccessful case; also, the same in Vassouras.

The mortality from yellow fever has been considerable in the city of Campinas, province of Paulo, so that all the population left the city except two or three thousand. [The population of Campinas is about thirty thousand.—*Dr. Gaston.*] I went to Campinas to apply my vaccination, in the height of the epidemic, and the result has been such that in a few days the epidemic has declined in a remarkable manner and will not take long to become entirely extinct as you can see from the following telegram from the *Gazeta de Noticias* of May 4th.

"Campinas, May 3rd. Dr. Angelo Simões, assisted by the druggist Camara, has already vaccinated more than six hundred people by the process of Dr. Freire, having obtained splendid results. The epidemic is declining rapidly. In the Holy House of Mercy here, there is not a single epidemic. The other infirmaries will soon close. The population is satisfied with the result of the vaccination."

Among those vaccinated this year, the mortality was not seven-tenths of one per cent. and yet the number of deaths among those not *vaccinated* was more than four thousand. In a short time, I will publish a statement of this, with the signatures of physicians and other respectable people who guarantee the truth of the results, in order that I may save myself from the perverse, who, having no other weapon with which to attack me, make use of calumny, branding my statistics as false.

Your friend,

Domingos Freire.

MISCELLANEOUS.

NARCOTICS IN MENTAL DISEASES.—Dr. T. S. Clouston (*Amer. Jour. of Medical Science*), says:

1. Make up your mind clearly, from the symptoms present, whether your patient needs a pure hypnotic, a general nervous sedative, or a simple motor depressant, before you use any of these drugs.

2. Use all such drugs experimentally in each case at first, and watch their effects not only on the higher nervous functions, but on all the organs and their functions, and on the general organism.

3. Even when there is sleep and quiet produced for the time, with no apparently bad results, look to the general feeling of *bien être*, the recuperative energy, the expression of face and eyes after their use, and see if there is any undue action as if some energy that must have an "outlet" were merely being "suppressed" for the time being.

4. Stop using such drugs as soon as possible, trying experimentally how the patient gets on without them.

5. Keep asking in every case, "Are we sacrificing, in any degree, the highest function of mental inhibition by their use?"

6. Never omit general measures for the restoration of the health, nutrition, and higher nervous functions, while you use such remedies.

7. Paraldehyde is the purest and least harmful hypnotic yet introduced when the insomnia is marked and intractable. Urethan and sulphonal cannot compare with it. Opium and chloral have special dangers and disadvantages.

8. Use the bromides as accentuators and prolongers of the effects of other drugs, and in order to be able to employ smaller doses than otherwise.

9. A combination of cannabis indica and the bromides is the best and least harmful of general sedatives.

10. Hyoscine is the best pure motor depressant, but it needs care.

11. We should never narcotize an insane patient or one threatened with mental disease.

12. It is as dangerous to use mere anodynes by the mouth or subcutaneously to relieve mental pain as to subdue bodily pain by these means only, perhaps more so.

13. It is generally far better therapeutics to enable your patient to bear his mental pain and the effects of his insomnia by improving his general nervous tone and the nutrition of his body than merely to produce quiet and sleep by drugs.

14. It is commonly a safer thing for the patients, and tends more toward natural recovery from his disease, to provide a physiological

outlet for morbid motor energy than merely to repress it directly by drugs.

15. It is almost always preferable to treat cortical exhaustion, irritability, and undue reflex excitability, by rest, and by improving the fattening and nutrition of the body, than by continuous sedatives, the great exceptions being the treatment of epilepsy and convulsive affections by the bromides.

POTATOES AS A SUBSTITUTE FOR LAPAROTOMY.—The *Canadian Practitioner* of May 1, 1889, quotes the following from the *International Journal of Surgery*: At a meeting of the Imperial Society of Physicians, in Vienna, Dr. Salzer reported a communication from Dr. Cameron, of Glasgow, upon the "potato cure" first recommended by the Scotch observer. Dr. Cameron has used this plan of treatment in several cases of ingestion of large foreign bodies with gratifying success. Salzer has also had an opportunity to try the potato cure in the case of a boy who had swallowed a brass weight of twenty grammes. Potatoes were fed to the child cooked in a variety of manners, so as to encourage his appetite. He took them willingly. After five days the brass weight was compelled to retreat, overwhelmed by the constant accessions of reinforcements from above, and passed out, leaving the potatoes in possession of the field. In the same manner he treated the ingestion of a set of artificial teeth, while in another case a scarf-pin proved no match for its farinaceous antagonist. Dr. Salzer believes that this form of treatment will subserve a useful purpose in many cases in which, up to now, a gastrotomy appeared to be the only form of relief available. He also advised the members to place no trust in sauer-kraut, which has been recommended for the same purpose. Dr. Hochenegg related the case of a boy who had swallowed a nail six centimetres long, in 1884, and had been treated by gastrotomy. He had swallowed a similar nail two years later, when the potato cure had proved successful. Dr. Billroth spoke of the difficulty which exists in the removal of foreign bodies by laparotomy, and was strongly in favor of the potato cure.

THE VALUE OF AN IDEA.—The value of little inventions has had a singular proof or manifestation lately in the great run on "pigs in clover," a puzzle that has, we venture to say, been seen by nearly all our readers, for it has already made its way everywhere. Mr. C. M. Crandall, the inventor of this toy, says that for twenty years past he has had his mind on the availability of the rolling of marbles for a toy, and that in his model room the first experiment with the "pigs" took the form of a table, two feet in diameter, on a ball and socket joint. This was soon reduced to the hand toy now so familiar, of which 300 gross have been turned out daily for some time, while the demand has not yet been met by the supply. Mr. Crandall is a prolific inventor of toys, but it will be noted that it was twenty years before he evolved this last popular novelty in practical form. His perseverance and his success should give encouragement to other inventors, many of whom are at this very moment working upon new ideas of at least equal worth and utility. In the field of electricity alone, there is room for scores of Crandalls, who in some way or other are to hit the needs and fancies of the public. One does not look for the invention of such great novelties as the telegraph, the telephone, the electric light, and the electric motor every day of the week; but electrical improvements and devices, as trivial and as valuable as "pigs in clover," may be arrived at endlessly, and are not to be despised.—*The Electrical World.*

HOW SHALL DOCTORS ADVERTISE ?—*The American Lancet*, after considering some of the ways a medical man makes known to the public that he is ready to care for the sick, viz.: by the sign, the card, the free dispensary, the sanitarium, etc., gives this good advice when he is considering whether a certain mode of advertising is proper:

a. The honor of medical art and science should be held clearly in mind. One must in his mind see that during thousands of years self-denying individuals have, by patient labor and enthusiastic devotion to the study of natural science, laid the foundations and reared the superstructure of the present temple of medicine. Nothing should be done to defile this temple. The doctor becomes a priest in this temple, and will see to it that his exercise of the priestly office is untainted. He will regard medical art as of more importance than his own personal ambitions, and be ever ready to sacrifice the latter for the advantage of the former. We think that in this respect most mistakes are made. Many forget their allegiance to medicine, and steal the livery of Esculapius for purely mercenary ends; false prophets they are, giving false service to the people and leading them astray.

b. One must never forget his brother doctors. In all his efforts to make himself known among the people in whose midst he resides, he should respect the feelings and respect the work of all other doctors. More than most are aware, this would promote the self-interests of each.

c. Above all, each should strive to do the best work possible with each patient. Such work, beyond question, is the best advertisement that any doctor can have. He who cures safely, quickly and pleasantly will certainly have brought to him an increasing number of persons desiring to be healed. His patients and their friends are certain to make his name and fame known throughout the circle of their acquaintance.

AT a recent meeting of the Royal Academy of Medicine, in Ireland, Mr. O. Callaghan reported a case of tubercular peritonitis which he had treated by opening the abdomen and flushing out with blood-warm water. The abdomen was full of sero-purulent milky fluid, the peritoneum and intestines were covered with little nodules like millet seeds, and the mesentery was like the "roe of a shad." The boy, who was 15 years of age, made a perfect recovery and ten months after the operation was apparently free from the disease and was doing his daily work.

At the same meeting Mr. Myles described a new method, which he had devised, of extra-articular suture of the patella to bring about bony union in transverse fracture. The method consists in passing a strong pin transversly through each fragment and then bringing them together by a figure of 8 suture. It is stated that a very small force is required to bring the fragments in apposition.

MUNICIPAL APPRECIATION OF MEDICAL SERVICES.—It is unfortunately not often that a municipality sets a just estimate upon medical services for which it is called upon to pay. A commendable example in this respect has been set by the Municipal Assembly of St. Louis, in voting an appropriation of $500 to Dr. A. C. Bernays, for attendance on a member of the police force who had been injured in the discharge of his duty. We learn that the case was one of gunshot wound of the abdomen involving the stomach, the duodenum and the jejunum, and that immediate laparotomy was performed with perfect success.—*N. Y. Med. Jour.*

MEDICAL NOTES FROM JOHNSTOWN.—Professor W. S. Forbes, of Jefferson Medical College, who organized and carried to Johnstown the first medical relief corps and stores to reach the flooded district and who only returned last Tuesday, has kindly placed in our hands the following brief notes of his medical observations while on the ground:

"In a visit to Johnstown immediately after the flood in the Conemaugh and Stony Creek Valleys on the 1st of June, I was very strongly impressed with the fact that by far the great majority of persons exposed to peril during the flood and who had escaped, had ecchymosis of the conjunctiva to a greater or less degree. The ecchymosis was very decided in very many persons and caused a great deal of suffering. The blood out of its normal vessels acted as a foreign body and caused many parties to seek professional relief.

"In the bodies of the dead the eyeballs appeared protruded as a general rule and the eyelids were opened wide. The bodies were considerably bruised. In one instance an arm had been torn from the body at the shoulder joint and could not be found. In no case had decomposition progressed to any extent until about the sixth day. The temperature of the air was about 76° F. during this time, nor did it fall below 60° F. at any time. The sun was out only one day, the 5th; after the sixth day, on the exposure of the body, decomposition was rapid.

"Nervous shock was a prominent feature among all the survivors. On hearing of the death of their relatives, several cases were so overcome that functional activity seemed paralyzed, nutrition was suspended, and death ensued.

"There were comparatively few injuries among the rescued, and they slight in character. It seemed to be, for the most part, either death or escape without injury.

"There has been thus far a remarkable freedom from all forms of sickness, in view of the exposure incident to the flood. On the sixth day I had heard of but a single case of pneumonia, and a few sporadic cases of measles.

"Six of the physicians of Johnstown were drowned—more than one-fourth of the entire number in the town. These men were lost in their endeavors to assist others to escape—and by their character and death illuminate the entire body of their profession. Dr. Brinkey was a conspicuous example of heroic devotion. He rushed again and again from safety into peril, urging the way of escape to many, until he was overwhelmed with a large party, whose bodies with his own were recovered under the débris of the Hurlburt House.

"As a type of the self-sacrificing devotion shown by the physicians of Johnstown toward the sufferers, we may particularize the case of Dr. W. B. Lowman, the founder of and surgeon-in-chief to the Johnstown Hospital. As soon as he had escaped from the débris of his home and rescued his family of eight persons, including his venerable father, Dr. John Lowman, and many who had been caught and given refuge in his house as they were being swept by in the flood, he at once set to work on his further mission of mercy. He immediately despatched a messenger on horseback across the country to Somerset, some miles away, and was the first to summon by telegraph medical aid and stores from Philadelphia, and he has been constant and untiring in his personal labors and in the organization of medical relief.

"Dr. Matthews, another of the surviving physicians, early in the flood had two of his ribs broken, but, notwithstanding, remained with a large party of women in a house where they had been rescued and took charge of several of them who had premature confinements brought on by the tremendous strain on their nervous systems. I did not hear of the death of a single one of them. This entire party was rescued under Dr. Matthew's guidance.

"Of the surviving physicians, some lost members of their families, and all nearly all of their worldly goods.

"The State Board of Health, under the superintendence of Dr. Benjamin Lee, was promptly on the ground, and, although it was necessarily greatly hampered in the difficult problems it had to cope with, it rendered most efficient and valuable service in all matters relating to sanitary details.

"This catastrophe has developed in the afflicted region and in the country at large, a depth of generosity, breadth of humanity, and an elevation of character that do honor to the human race.

"W. S. FORBES, M. D."

THE HEALTH DEPARTMENT OF NEW YORK CITY.—The appearance of yellow fever in Brooklyn emphasizes the recent report of Dr. Moreau Morris concerning the unhealthful condition of the bulkheads and slips along the river fronts of New York. As an expert of large scientific experience he asserts that the bulkheads and platforms are so rotten that should cholera or yellow fever obtain a lodgment it would be impossible to eradicate them. He in this connection calls attention to the fact that frost does not kill these germs, for they only hibernate, and under the heat of summer regain activity and rapidly increase. Possibly there is no great or immediate danger in this direction, but as the unexpected is always happening due attention should be paid to Dr. Morris's warning. Because the danger of a yellow fever epidemic is remote affords no excuse for allowing the slips and bulkheads to become fit places for the breeding of germs.

It is understood that the Board of Health is sensibly impressed by the gravity and importance of its chosen officer's report, and it is quite likely that President Wilson and his fellow Commisssioners will take prompt action and exercise the necessarily autocratic powers granted them. The utterances of the Dock and Public Works Commissioners and their engineers, to the effect that the Board of Health is the only department possessing the necessary power to secure a cleanly water front, will no doubt be accepted, and the Dock and Public Works departments may find it imperative to move in the matter under the spur of the Health Board.

Precisely what steps will be taken is as yet undecided, but that something will be done is quite certain. Heretofore it has been the practice to consume a great deal of red tape in the way of correspondence with other departments in hopes that existing evils might be corrected. But the present Board recognizes the danger and the need for prompt and decisive action, consequently there may be such a stirring up of delinquents, and so positive and peremptory an enforcement of the Sanitary Code that many people will be surprised. President Wilson stands pledged to give the citizens of this city a good, honest and energetic Health Department, and those who know him best say he is just the man to fulfill these pledges. Already there are signs of animation in the Department and evidence of earnest attention to duty on the part of subordinates, so this question of illegal dumping of refuse into the sewers and slips, the improper condition of the sewer outlets, and the irregular method of constructing and improving bulkheads, will in all probability get such a shaking up that only good results can follow the agitation. Further and more searching investigations are now in progress, not only of the docks, but in tenement-house districts and in the streets. Upon these reports a plan of operations will be formulated by which it is hoped that the health of the city may be improved.

MEDICAL NEWS AND NOTES.

THE Medico-Legal Congress opened June 5th, at Steinway Hall at 10.30 o'clock, and was called to order by President Clark Bell, of the Medico-Legal Society. Dr. Talmage offered an opening prayer. Lieut.-Gov. Edward F. Jones was elected temporary chairman. Ex-Judge Noah Davis, Dr. Isaac L. Peet, ex-Coroner Moritz Ellinger, Coroner Le Monnier, of New Orleans; Roger Foster and Dr. Thwing made brief addresses.

The long-talked-of American International Congress of Medical Jurisprudence was then organized, with the following officers: President, Clark Bell, of New York; First Vice-President, Justice Bermucez, of New Orleans; Second Vice-President, Dr. John J. Reese, of Pennsylvania; Third Vice-President, ex-Judge Noah Davis, of New York; Fourth Vice-President, Dr. W. W. Godding, of Washington; Fifth Vice-President, Dr. C. E. Hughes, of St. Louis; Sixth Vice-President, Dr. Carl L. Harsh; Seventh Vice-President, David Stewart, of Maryland; Secretary, Moritz Ellinger, of New York; Assistant Secretaries—Drs. Frank H. Ingram, of New York; W. J. Lewis, of Hartford, and J. F. Walters, esq., of New York. Eight papers were then read, their authors being, respectively, R. Ogden Doremus, of New York; Dr. C. Spaduro, Italy; V. C. Vaughn, Ann Arbor; Harold P. Brown, New York; Y. R. Le Monnier, New Orleans; J. Murphy Mitchell, New York; Clark Bell, New York.

Dr. Reese read a very interesting paper which will be published in an early number of this JOURNAL.

A LION OPERATED ON.—An operation on a lion is so seldom performed that even when the surgeon does his duty in a somewhat rough-and-ready way the incident is worthy of record. Such a case has just occurred in the Clifton Zoological Gardens. A lion in that collection had for some time past been tortured by a claw growing into the flesh of its left forepaw, but owing to the uncertain temper of the king of beasts it was not considered prudent for any one to try and relieve him. The only way open to the keepers of the maimed lion was to place it in such a position that it could not turn round and then to seize a happy moment for the extraction of the claw. This was done by inducing it to leave first one cage and then another until it was confined in one so small that it could not spring either to the right or to the left. Then, while the wounded paw was protruded through the bars, the claw was promptly whipped out of the flesh, into which it had grown more than half an inch.—From the *London Daily Telegraph*. [Not long since DR. CONKLIN operated successfully on a tiger of the N. Y. Central Park Zoological for the same malady. The creature was chloroformed and the claw removed, being carefully dissected from its matrix.]

A DOCTOR'S FEE OF FIFTY THOUSAND POUNDS.—According to the *Medical Press and Circular*, a curious case will shortly come on for trial in a law court in Saxony, the result of which will scarcely fail to be interesting to most practitioners. A medical man was in attendance upon the wife of a rich man in Saxony. The patient was exceedingly ill, and her husband was naturally extremely anxious. For the purpose, as it would seem, of stimulating the best energies of the practitioner, the husband promised, if his wife recovered, to give half his fortune to the doctor. The circumstances were propitious for the patient, and her health became established—in short, a complete cure was effected. This result having occurred to the entire satisfaction of the husband, the latter forwarded in the course of time a large sum of money in requital of the practitioner's services. The doctor, however, refused to accept the sum in question, and claimed as his reward the moiety of the fortune which had been promised him. The rich man's fortune was equal to £100,000, and although he seems to have agreed to dispose of half of this amount to the medical man in the event of the recovery of his wife, he now refuses to carry out his promise which he had given, and repudiates the claim which is being made upon him. Thus the aid of the law is about to be sought, in order to determine the point in dispute. The case for the doctor will in all probability entirely depend upon the legal evidence which he is able to produce of the agreement. It is scarcely to be supposed that any feeling of sentiment will be allowed to influence the result. Rash promises made in the presence of medical men, either by patients or their friends, are matters of almost common occurrence under certain circumstances, while the rapid declension of that feeling which is called gratitude, after the danger is past, is proverbial, as far as the practitioner is concerned.

ACCORDING to a dispatch to the *Staats Zeitung*, Dr. von Bergmann, at a recent meeting of a congress of surgeons, said: "Although the privilege of ministering to the ailments of their Emperor was denied the German surgeons, they nevertheless will continue to strive to obtain the hightest pinacle of usefulness in their professional capacity so that out of that era of trial and sorrow there may spring forth a time of blessing and joy."

THE Emanuel Sisterhood of Personal Service, of New York, has been incorporated. Its object is to direct and aid its members who desire to devote a portion of their time to visiting the sick and caring for young children.

It is to be hoped that such associations may be formed in every section of the country. In our large cities especially, voluntary associations of this sort would be productive of great good both to their members and to the sick of all classes of society.

THE VISION OF INSECTS.—According to a communication made by Siegmund Exner, the well-known professor of physiology, insects get by their composite eyes a single erect image of exterior objects; and their dioptrical apparatus acts like an astronomical telescope. By Exner's experiments, which were made on lampyris splendidula, the old theory of the mosaic vision of insects is definitely disproved. It is also interesting to note that the pigmented layer surrounding the crystalloid bodies of the insect's eye is elongated by the action of light and shortened in darkness.—*Lancet.*

NEW YORK POST-GRADUATE MEDICAL SCHOOL.—The summer term of this institution opened on June 17, 1889. The fees for this session are one half those of the winter term, although the advantages in the dispensary of the school and in many of the hospitals of the city are quite as good as during the winter.

FLORIDA has appointed a Board of Health which is to appoint its own secretary. The latter is to be a physician, and in receipt of $3,000 per year.

ANTISEPTIC CARPENTERY.—There appears to be such a thing as a diagnosis of disease in wood, and the botanical physicians profess to know that it may be contagious or sporadic. Dry rot is called contagious, and it is said that the germ of that disease may be communicated to sound wood by tools which have been at work in diseased. It is thought possible that the theory accounts for many incomprehensible breakages of timber. The suggestion is that sound lumber should not be cut with the same saw that has passed through stuff affected by dry rot without cleaning.—*Amer. Druggist.*

SURGERY OF THE SPINAL CORD.—Dr. Lampiasi tells of the case of a man, aged twenty-eight, who was thrown from his horse, which fell on him. There was sensory and motor paralysis, with loss of control of the bladder and rectum. There was some prominence of the twelfth dorsal vertebra. An incision was made over the spinous process, and the bone was exposed. There was fracture of the left superior articular process, and of the left transverse process of the twelfth vertebra, with luxation backward of the right upper articular process so as to override the lower articular facet of the vertebra above. The two superior processes of the twelfth vertebra were resected, and the dislocation reduced. There was no improvement in the symptoms, and death occurred six days after the operation. At the *post-mortem* examination there was found rupture of the lateral ligaments, detachment of the intervertebral disk of the twelfth vertebra, which remained adherent to the eleventh, and projected three-quarters of an inch into the spinal canal, where it pressed on the front part of the cord.—*The British Med. Journal*, May 4, 1889.

THE good old priest, Father Damien, is dead, and he died in the service of humanity. For sixteen years he was a prisoner at Kalawao, the leper asylum on Molokai. For nearly sixteen years he administered unto the poor outcast wretches, giving them medicines, dressing their sores, burying their dead, until finally he himself succumbed to the foul disease.

Father Damien went to the Islands in 1864, when he was only 24 years of age. In 1873 he went voluntarily to the asylum and remained with the lepers until his death, April 10, 1889.

The exact year of the appearance of the disease upon the good man we do not know, but it was within the last five years. In the course of a letter to the writer, dated Kalawao, Sept. 2, 1879, he writes: "My own health continues to be the same as before; perhaps I have the germs of leprosy in my system—I am not sure."

The world does not show many such instances of devotion to principle, but every such instance makes us think better of human nature, and every such man as Father Damien makes the world better for his having lived in it.—*N. O. Med. and Surg. Journal.*

FATHER DAMIEN.

DIED APRIL 10TH, 1889.

BY JOHN B. TABB.

O God, the cleanest offering
Of tainted earth below,
Unblushing to thy feet we bring—
"*A leper white as snow!*"

—From *The Independent*.

SALT IN MILK FOR CHILDREN.—Dr. A. Jacobi (*Arch. of Ped.*) says that the addition of chloride of sodium prevents the solid coagulation of milk by either rennet or gastric juice. The cow's milk ought never to be given without table salt, and the latter ought to be added to women's milk when it behaves like cow's milk in regard to solid curdling and its consequent indigestibility. Habitual constipation of children is influenced beneficially, since not only is the food made more digestible, but the alimentary secretions, both serous and glandular, are made more effective by its presence.

REMARKABLE ELASTICITY.—In experiments recently made in France on the elasticity of cork, it was found that disks of that substance, when submitted to a pressure of sixty-six tons to the square inch, were compressed to one-fifth their thickness, and recovered their original dimensions in ten minutes after the pressure was removed.

THE *Moniteur Therapeutique* publishes a note on the incompatibility of the chlorate of potash and the iodide of iron. This incompatibility was revealed by the death of a child which fell a victim to it. The author remarks that these two substances, in reacting between them, yield the sesquioxide of iron; the chloride of potash and iodine is entirely set free.

TRANSMISSION OF PNEUMONIA FROM MOTHER TO FŒTUS.—At a meeting of the Sociètè de Biologie, of Paris, M. Netter reported the case of a woman seven and a half months pregnant, who entered the Hospital Beaujon on account of pneumonia. She made a good recovery, but two days after the temperature had fallen to normal, was delivered of a child which lived only five hours. At the autopsy there was found a frank pneumonia of the right upper lobe, accompanied by a fibrinous pleuritis, pericarditis, suppurative, cerebro-spinal meningitis and otitis. Pneumonococci was found in the lung and in the blood. —*La Tribune Medicale.*

DR. ENGLEMANN has observed an eruption following the use of thirty grains of sulfonal in a patient suffering from insomnia. The sleeplessness was due to recurrent attacks of dysmenorrhœa. The woman took the sulfonal at 7 in the evening, without hypnotic effect whatever. The following morning a bright scarlet exanthem appeared on the chest. There was moderate itching, but no other symptom of the disease. The rash spread over the arms and abdomen, and then after two days disappeared, the itching meanwhile having become more troublesome. The writer attributes the appearance of the drug-eruption to vasomoter disturbance.—*Münchener Medicinische Wochenschrift.*

ICE IN THE SICK ROOM.—A saucerful of shaved ice may be preserved for twenty-four hours with the thermometer in the room at 90° F., if the following precautions are observed : Put the saucer containing the ice in a soup plate and cover it with another. Place the soup plates thus arranged on a good heavy pillow, and cover it with another pillow, pressing the pillows so that the plates are completely embedded in them. An old jack-plane set deep is a most excellent thing with which to shave ice. It should be turned bottom upward, and the ice shoved backward and forward over the cutter.

WALDO BRIGGS, M.D., St. Louis, Mo., writes thus : I have used "Campho-Phenique" for some time past in my private practice and at my clinic at Beaumont Hospital Medical College, and am very much pleased with its action as an antiseptic anæsthetic surgical dressing. I have had the most excellent results with it in caries and superficial necroses, using it pure, or dissolved in various proportions of oleaginous matter. Suppuration was controlled, the removal of sequestra facilitated, and recovery hastened in a remarkable manner. In short, I may say that I consider it the most valuable of all the additions of modern chemistry to surgical therapeutics.

ALETRIS CORDIAL is said to be very efficient in the treatment of irregular menstruation.

WE record with regret the death of the distinguished gynæcologist, Dr. Jas. B. Hunter, of New York.

GREEN SOAP IN CARIES.—Dr. Kollmann (*Munch. Medic. Wochenschr.*) has obtained excellent results in cases of caries from the use of green soap, which he rubs in with a sponge or the palm of the hand over the neck, back and the posterior surface of the thighs. These applications are made two or three times a week, and best at night, the quantity of soap used varying from twenty-five to forty grammes. The soap is left on for half an hour, and is then washed off with warm water and the patient sent to bed. Except in cases ef chronic periostitis, or caries of the pelvis, spine, or lower extremities, the patient is allowed to follow his occupation during the day. Change of diet and cod-liver oil are not essential during the time of treatment, although they may hasten recovery. The results of this treatment were astonishingly good, the average duration being four and one-half months. The author thinks that in caries there is an excessive quantity of lactic acid in the blood and tissues, which is neutralized by the alkaline property of the soap.—*Wiener Medicinische Presse*, March 31, 1889.

AMPUTATION OF THE THIGH OF A THREE DAYS' OLD CHILD.—Dr. J. W. Maddin, Jr., of Nashville, Tenn., reports in the *Medical Record* a unique case of amputation of the thigh in a child three days old for gangrene, which had occurred during intra-uterine life. The transfixion operation was performed just below the hip joint, making use of anterior and posterior flaps. No tourniquet was used, but the bleeding was controlled by compressing the artery, where it passes over the pelvic bones, with the finger. The tissues were dissected back to within an inch of the head of the femur, and the bone sawed into at this point. The operation was completed in the usual way, tying the arteries with silk ligatures and closing the wound by bringing the flaps together with silk sutures. No drainage was provided for other than that caused by allowing the ligatures to pass out of the lower end of the wound. The wound healed very promptly, with but little suppuration or discharge; the dressings were renewed every two days, and twenty days after the operation there was only a small part of the wound not closed.

Ether was the anæsthetic used in this case—a remarkable fact in connection with the anæsthetic being that nearly a half-pound of Squibb's ether was used before sufficient anæsthesia was accomplished to proceed with the operation, and it required thirty minutes to accomplish this amount of anæsthesia.

AT a recent meeting of the Academy of Medicine of Paris, Dr. J. A. Fort read a paper, in response to a criticism, on the treatment of strictures of the urethra by linear electrolysis. His conclusions were as follows:

1. His electrolyser is a new instrument.
2. Relapses are not as frequent after his method of treatment as when other methods are employed.
3. His two patients, publicly operated on in the clinic of Dr. Richet at the Hotel Dieu one year ago, are still in good health, without any sign of relapse, although dilatation was not resorted to after the operation.
4. Electrolysis should be preferred to urethrotomy, dilatation, or divulsion, even if it were shown that relapse is the rule instead of the exception.
5. In the treatment of strictures we have now, in linear electrolysis, a rapid, painless and absolutely harmless method, which substitutes for an incision a linear, bloodless destruction of tissue.

ACCORDING to some recent researches made by Von Esmarch on the action of steam as a disinfectant, the destruction of bacteria would seem to depend not so much upon the temperature as upon the degree of saturation of the steam. If there is air with it, the power of destroying organic germs is very much diminished. In the course of some experiments on the spores of the bacillus anthrax, he found that while superheated steam which was not in a condition of saturation at a temperature of 120° C. was unable to destroy the spores in half an hour, saturated steam at 100° C. destroyed them in from five to ten minutes. This information will have to be borne in mind in the construction of apparatus for disinfecting by means of steam, the uncertainty of which is thus explained in a way which will enable it to be remedied in the future.

EDITORIALS.

THE Inauguration of the International Congress of Medical Jurisprudence, which took place in the City of New York, during the first week of June, does not seem to have called forth the interest that might have been expected from the medical profession generally, judging from the very meagre notice taken of its proceedings by the medical press throughout the country.

It perhaps may be interesting to your readers to be informed that the first session of this International Congress has proved a decided success, quite realizing the expectations of its projectors.

It is to be regretted that a subject of so great practical importance, to both the physician and the lawyer, as *forensic medicine*—the application of medicine to the purposes of the law— is so generally neglected in nearly all the medical and law schools of this country. Only comparatively few of them .make any pretense of teaching it ; and still fewer make it obligatory upon the student, as necessary to his graduation. The natural consequence of such neglect is that only an exceedingly small number of the annual graduates of our medical and law colleges have the slightest knowledge of Medical Jurisprudence, and are totally unfit to act either as expert witnesses, or to give testimony in cases involving the question of the cause of death, of personal identity, of testimentary capacity, of insanity, of infanticide, and numerous other important questions constantly presenting themselves.

The New York Medico-legal Society, under the masterly guidance of Mr. Clark Bell and his able colleagues, has, for a number of years past, been doing noble work in this line of science. At its monthly meetings most interesting papers, pertaining to medico-legal subjects, are read and discussed, and their proceedings are duly reported in the *Medico-legal Journal*, a quarterly which occupies the very forefront among the journals devoted to forensic medicine.

It was through the energy and zeal of this society that the International Medico-legal Congress was organized. This assemblage brought together a large number of distinguished men from different sections of our own country, and from abroad, who have devoted special attention to Medico-legal subjects. At the different sessions of the Congress, which lasted four days, a large number of learned papers were read and discussed by the members in attendance. As these of course will be published in the proceedings of the Congress, and will therefore be accessible to all, they need not be further particularized here.

Two important resolutions were adopted on the last day of the session; one, offered by Mr. Clark Bell—"That as the sense of the medico-legal Congress, it is the duty of every college or university, in which law or medicine is taught, to establish and maintain a chair of Medical Jurisprudence." The second resolution was offered by Prof. John J. Reese, of the University of Pennsylvania, and was supplemental to that of Mr. Bell. "In the opinion of this Medico-legal Congress, not only should the subject of Medical Jurisprudence be recognized among the regular branches taught in the various medical and law schools of the country, but that attendance upon this branch by the students be made obligatory, and examination thereon be considered a necessary requisite for graduation in either medicine or law." This resolution was ably supported by Dr. Le Monnier of New Orleans, and others, and received the unanimous assent of the Congress, showing the very decided sentiment of the assemblage upon this topic.

On the last evening of the meetings, a very elegant banquet, at the Hotel Marlborough, was participated in by some two hundred ladies and gentlemen. The dining hall was appropiately decorated with bunting and flowers; and speeches were made by many well known and distinguished visitors,—among others, Governor Biggs of Deleware, Charles A. Dana, Joseph Howard, Jr., Ellis H. Roberts, Ex-Judge Noah Davis and others.

On the whole we may pronounce the first meeting of the International Congress of Medical Jurisprudence, a decided success.

CONCERNING THE PROPRIETORSHIP OF A PRESCRIPTION.—Our contemporary, the *Canada Medical Record*, narrates the case of a doctor in Liverpool who wrote to the press complaining that a "prescription, which he gave to a patient, was being used by that patient to cure a great number of his friends." This matter raises a question which has long been a *questio vexata* between patient and doctor. The Liverpool doctor held that the proper thing for his client to do was to send the patients to him for treatment, that his patient, who was a joiner, had no more right to take his prescription and do work with it, than he, the doctor, had a right to borrow the joiner's tools and lend them to other people.

It is to be regretted that this question in the broad sense, cannot be settled by law. It is certainly difficult to decide in the matter for there is much to be said on either side.

An opinion from either a layman or physician must be colored by prejudice—hence the difficulty of a righteous judgment, since every community is divisible into medical and non-medical men. Nevertheless the question ought to be submitted to some upright judge or judges whose minds are not so packed with that equivocal abstraction, legal right, that there is no room for moral right in them. The

Liverpool doctor is technically wrong, to say the least. The comparison which he makes, is not a correct one. His patient presumably *paid* him for the prescription ; the statement, therefore, that he has no more right to lend it to others than he, himself has the right to *borrow* his client's tools and lend them to others, is obviously unjust and irrational. For, in borrowing, there is no *quid pro quo* which is tangible or negotiable.

Again, the question arises, if a man were to pay for the use of a joiner's tools, would he have the right to lend these tools to others, as long as the compact lasted ? Beyond a doubt he would, for, at least legally, we have a parallel of this action in the sub-letting of a house. But again the comparison is wrong, for, in paying for the prescription, there is no stipulation direct or implied that it is to be returned. The prescription, therefore, must legally belong to him who has paid for it and, as his property, he can do what he wishes with it.

A prescription amounts to advice ; oral instruction would therefore be equivalent to a prescription. It is evident that no legal right could command and impose silence concerning instruction, unless specifically stipulated. What distinguishes the medical profession from business is the existence of ethics in the medical profession. Ethics primarily is the cult of unselfishness and self-sacrifice for the good of others. Ethics is one of the results of civilization, and of the cultivation of the germ of nobility, which exists in us as a latent quality only. But suppose a physician by long experience and investigation has discovered some means of treatment of great value in certain cases. Is it right that his knowledge should be scattered broadcast and he receive no recompense, in any wise commensurate with his trouble and ability ?

Again, on the other hand, if a person be suffering, is it morally right that he be allowed to suffer till help arrive through the conventional channels ? By no means. Let it be remembered, however, that the ethical physician has no objection to his methods being used by his brethren : the existence of medical journals is sufficient proof of this. If a physician denied all the use of his knowledge, the restriction would be equivalent to the use of letters patent and such a thing is inconsistent with medical ethics.

Let us hear the conclusion of the whole matter : the patient must have the legal right to make use of a prescription in any way he wishes, provided he does not infringe on the law in other respects, for instance, as in the receipt of money for the use of the prescription. Morally he has no right to use it. We are in the hands of the public, we must practice self-sacrifice, and this matter is a phase of it ; let our ethical principles be the foundation of our profession, to distinguish it from business. And yet notwithstanding all the difficulties thrown in our way, it is a significant fact that doctors continue to live and patients continue to die.

WE are in receipt of the "Transactions of the Medical Society of Virginia." Nineteenth session, for the year 1888.

It would give us great pleasure to review many of the articles to be found in its pages, but it would be so difficult to select those which deserve no mention from those which do, that we are forced to decline the task. The addresses, delivered before the society, are creditable as showing broad unbiased and scientific views of the medicine and surgery of the present day. Of peculiar interest and value to those living in the southern States, was the discussion of the atypical forms of typhoid fever.

In several special departments more research on the part of the "reporters" would have resulted in more lengthy and valuable compilations.

The volume is extraordinarily large and is printed in large clear type.

The Transactions of the Virginia Medical Society for the year 1888 is a credit to the Society.

THE *Baltimore Medical Journal* says: A movement is on foot, to secure a conference among prominent medical men of this city, for the purpose of devising some plan by which all the Faculties and societies may seek together to advance the interests of medical education in the State of Maryland.

We will look with much interest for the results of this movement. Wisely directed it cannot fail to accomplish much good.

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ORIGINAL ARTICLES.

ARTICLE I.

CHOLERA INFANTUM. A Practical Paper.

By JNO. HERBERT CLAIBORNE A.M., M.D., Petersburg, Va.

Cholera infantum has been well defined as an acute gastro-intestinal catarrh occurring during the period of first dentition and characterized by vomiting, profuse purging of large watery stools, high temperature, great prostration and rapid wasting. The line of demarcation between this and acute diarrhœa of children, is so difficult to trace that, in domestic practice and amongst the majority of physicians, the symptoms are gathered into the generic name of "Summer Complaint." As far as I am informed, writers outside of our own country do not recognize the name of cholera infantum at all, but the American editor of Dr. Goodhart's book on the disease of children observes that there are two forms of summer diarrhœa in children of such importance that they deserve a detailed description: cholera infantum and entero-colitis. Dr. Conkling (Hand-book of Medical Science), article cholera infantum, says that typical cholera infantum contrasts so strongly in symptomatology and fatality with all other forms of summer diarrhœa that it is entitled to a separate name and consideration. Foreign authors are mostly content to dispose of the nosology of the disease under the heading, acute and chronic diarrhœa of children; whilst almost all American writers from Eberle to Lewis Smith follow this nosology, I have never been able to regard it as more than an infantile summer diarrhœa induced and aggravated by heat, dentition, dirt, unsanitary surroundings and improper feeding. The most of American writers regard it as a disease almost exclusively of the cities, and some suppose that it is indigenous to American cities. I suspect that there are few experienced general practitioners especially in the provincial towns of the Southern States, who will accept that dogma. And, in reference to the latter, it is difficult to say why the same predisposing causes heat, impure air, improper food, redundant population, and dentition should not produce the same effects on one side of the Atlantic as on the other. It may be that the disease is less often seen in some portions of Europe on account of the perfection of sanitary police and the consequent removal or mitigation of the influences inducing it; or, that the digestion of the European infant may be more healthy and complete than that of the choleric and dyspeptic American, but I suspect that when we read in West, and Copeland and Rilliet and Bartez and Bilhad and Goodhart and others, of choleriform gastro-intestinal catarrh and choleriform diarrhœa and teething diarrhœa, and febrile diarrhœa, and weaning brashes etc., we are not far from the footsteps of our familiar cholera infantum. We do not know that the bacillus of the latter has been caught and cultivated; but when it is, I am sure that its analogue will soon be recognized under the same conditions on the other side; in other words, that the microbe of cholera infantum and that of choleriform gastro-intestinal catarrh will be the same. Even now there is a striking unity in the opinions of the authors discussing the pathology of cholera infantum in this country, and in those of the authors discussing the pathology of choleriform diarrhœa in infants in others. In cholera nostras and even in cholera asiatica there are often two stages of the disease, a primary stage of irritation and hyper-secretion followed by a secondary or inflammatory stage, in which there ensues an ileo-colitis, with its various pathological changes and characters, so more especially in cholera infantum, there is an acute form, characterized by frequent profuse, watery passages accompanied by vomiting and great restlessness and often by sudden and great prostration and wasting, which may end in dissolution or be followed by a sub-inflammatory condition in which the passages may be mucus, green, frothy, tinged with blood, or in every way, changed from the normal dejections from the bowels. The difference between the so-called cholera infantum and the acute summer diarrhœa, which seems to be most marked, lies in the fact that the former is never without some febrile movement, great thirst and restlessness; this may be more of a difference in degree than in character. And so, of the treatment, it must be directed to the stage and violence of the symptoms more than to any nominal characteristics of the disease.

The morbid anatomy of the disease gives no evidence of its specific and individual character. If the patient succumb to the first violent attack of the disease and pass away, as is quite often the case, in twenty-four or forty-eight hours, there is nothing beyond a certain anæmia and pallid condition of the mucous membrane of the intestinal tract. If the patient survives, then according to the violence and the duration of the attack, we may expect to find thickening or softening or possibly indolent ulceration of the mucous coat of the bowels. The treatment must be determined certainly by the stage and violence of the attack, and is dietary, sanitary and medical. In a case such as I now detail, a fair sample of an acute attack of cholera infantum, the treatment is very simple, the resources of the practition erfew, and the results soon determined. A.B. æt. 16 months, hearty, robust girl; never been sick or taken a dose of medicine. Was put to bed on the evening of June 17th, well and lively. In the afternoon of that day the child had been allowed to eat a few raspberries but they were freshly gathered and ripe. The day had been exceedingly hot and sultry, and the night was in keeping with it. About 11.30 o'clock P.M., the patient was taken with vomiting and purging; profuse watery ejections from bowels and stomach, fever and restlessness. This continued with but little intermission until 4 o'clock, A.M., when I was summoned. The features were pinched, the head and abdomen hot, extremities cold almost constant retching and profuse colorless discharges from the bowels every half-hour soaking through napkin; no food or curds in the dejecta at that time, thirst intense, ordered:—

℞.

Hydrarg. chlor: mit. - - - - -	gr. ij.
Sacc. alb. - - - - - - -	gr. viij.

M. Eight powders, one every half hour on tongue. To be fed with small pieces of ice every few minutes—and a spice bag wrung out in hot brandy, to be applied to the abdomen. Ten drops of French brandy every twenty or thirty minutes in spoonful of iced mint water. 1 p.m., retching ceased; bowels moved less often, but restlessness increased: child rolling from side to side of bed, continuously; eyes sunken and glassy; pulling with fingers at lips and tongue. Gave two drops of laudanum by enema and continued powders. 5 P.M., has not been quiet a minute since I saw her. Thirst excessive, head hot, extremities cold and moist-bowels checked, but effusion on brain apparent. 7 p.m.—Passed away in convulsions with all symptoms of acute pseudo-hydrocephalus. Duration of attack twenty-one hours.

What can be done towards curing or arresting cholera infantum can be done with a few remedies and without any complicated medications. In the primary stages, or in the secondary stages, or indeed in any stage prior to those last scenes in which the washed meat dejecta, the excessive emaciation, and the red glazed tongue proclaim the ulcerated gland, and the utter inability of exhalant or absorbent to fulfill their functions, mercury is with me, the main reliance, and the rarely failing resource. And by mercury I mean calomel. It is tasteless, easy of administration and acts more rapidly than any other preparation of mercury I have ever tried. The bichloride has been recommended in doses so small that they approach homœopathic fiction, the one-thousandth part of a grain every hour in a solution of water—a practice based upon a popular and growing idea, that every disease is of septic origin, and has its microbe; which can be killed or drowned in a sea of corrosive sublimate. But I have had no experience in its exhibition in cholera infantum, and doubt if it meet with general approval. In a sudden and violent attack of summer disease, in an infant, where there is great irritability of stomach, convulsions, vomiting, and excessive purging of profuse, light colored watery passages, I usually give one-fourth of a grain of calomel rubbed up with a little finely powdered sugar, in a teaspoonful of scraped ice; and repeat the dose every hour until the vomiting and purging are checked, or the dejections assume a greenish character. If the prostration is very great, I give in addition fifteen or twenty drops of French brandy every half hour in a teaspoonful of mint water until the child's recovery. The adjuvant treatment may consist in the application to the stomach of freshly bruised mint, or of cloths dipped in a tincture extemporaneously prepared by pouring a cupful of hot brandy on a tablespoonful of powdered cloves; in the use of the hot foot and hand baths, and of cold cloths to the head. The child should not for sometime be put to the breast, or have the bottle, if nursed by hand, but should take the breast milk teaspoonful doses if practicable, if not practicable, milk and lime water, half and half, in the same dose ice cold, every hour until relieved. Under this treatment it will rally in twenty-four hours, if capable of rallying at all, and the operations will be checked, or become thick and green. The calomel may now be suspended. If the operations continue too thin and too copious, I follow up the above with the following prescription, a teaspoonful every three or four hours according to effect.

℞.

Bismuth. subnit.	ʒj
Cretae preparat.	℈i
Sacch. albi.	℈i
Tinct. Camph. Comp.	ʒij
Aq. menth. pip. Aq. fontis.	āā ʒv

M.—Dose, teaspoonful.

Or the following:—

℞.

Bismuth. Subnit.	ʒi
Tinct. Opii.	gtt. xij-to-xxiv
Creasot.	gtt. j
Aq. Cinnamon.	
Aq. fontis.	āā ʒvj
Cum sacch. alb.	
Gum. acaciæ	℈ij

Dose, teaspoonful every four to six hours.

If there be blood or mucus in the dejections, and a disposition to strain I substitute the castor oil mixture of West, or give one to two drops of tinct. opii. in a tablespoonful of warm water by enema. Occasionally, when the skin is cool, the child restless and the fontanelle depressed, the passages in the meantime frequent and incontrollable, whatever may be the nature of the discharges, I exhibit one grain of calomel and 1-12 gr. of opium once in twelve hours, omitting all other medication except the French brandy in mint water. I have seen some children apparently rescued when *in extremis* by this treatment. Indeed I have rarely seen it necessary to repeat the calomel and opium more than twice, without remarkably good results. I first saw this treatment practiced under a level-headed old doctor, who was called in once in consultation with myself to see a very ill child which was apparently past hope, and which I confidently expected to die under this to me new règime. The dose was given one night at eight o'clock the next morning the child was bright and lively, had had no operation during the night and rapidly convalesced. I thought it then a case of "post hoc," and never until I had several times had the experience repeated did I give my full credence to the correctness of the treatment. If I am asked to explain the rationale of the practice, I must reply that I cannot. The old doctor said that the calomel acted as an excellent corrective to the secreting function of the largest and most important viscus of the body, the liver, and especially in conjunction with opium. But the new doctors say "tush, calomel does not have any effect on the secretions from the liver." Besides, "it depresses and debilitates." More than that, the most recent pathologists say that there are no evidences of functional or organic change in the liver in cholera infantum. But as Dr. Smith in diseases of children says, after a diatribe against calomel, "its use after all must be determined not by theory, but by observation." And Dr. Jackson remarks in his letters to young physicians "whatever objections theoretical men may make to the use of so potent a drug for a tender infant, few practical men after having once tried it are willing to treat the disease without this article." Opium, the sheet anchor of so many in the treatment of summer complaint in children, I use with great caution and often with many misgivings, especially if it be so that I cannot see the case several times during the day. The especial susceptibility of the infant to opium is greatly increased in this disease, according to my experience. And I think I have seen several little ones thrown into that sleep which knows no waking, from the injudicious use of paregoric and soothing syrup to "check up the bowels," by a nurse or mother. I rarely give a child opium in any form, uncombined with a laxative, except in the form of Dover's powder. If there be no sick stomach, I regard this as the most eligible mode of administration, and as the safest under all circumstances. In the chronic form of summer complaint of children, one or two grains of Dover's powder every night in conjunction with ten or fifteen of bismuth, or with three or four of phosphate of soda, I consider an excellent formula. When a teething child begins the summer with an attack of cholera infantum, it may be expected that some form of intestinal troubles of more or less severity, will follow it through the season. The medical care of the infant of course will be of prime consideration, and the medical man will have abundant opportunity of testing his skill in the changeful conditions which will probably arise. But one early and important lesson should be impressed on the parent and nurse; namely, medicine will not do everything in the conduct of the case. There will be great temptation to give too much physic, to rely too exclusively upon drugs and to trust too little to nature. Sometimes, when I have been asked by an anxious mother, "doctor, do you think my child will get through the summer with this complaint?" I reply, "that depends to some extent upon the fact whether you send for the doctor too often or not." A physician constantly called and continuously importuned to give something "to check the bowels" may lose his own balance and fall into a pernicious habit of treating every symptom, which varies in any manner from the healthy standard. Give nature some chance in the management of the disease, and she will often assert her superior wisdom, and prove her skill by results. And then too, the sanitary surroundings of the child, the dietary regime and the general management, I might say, moral, as well as physical, for the nervous and emotional nature of the little one, should certainly be considered as the most important factor in the general routine of treatment, all open a field for study and discussion too vast in extent to be thoroughly reviewed in an article of this kind. We can only go around its borders, make suggestions for improvement, when we think we see an occasion for change, and leave the minutiæ of detail to individual discussion and acumen. And first, on this subject, as to *heat*. The heat of summer seems to be one of the most generally acknowledged causes of cholera infantum, whether we regard its action as depressing upon the exceedingly sensitive nervous centres of the young child or as an irritant reflected from the heated skin through the continuous mucous membrane, which is but an inversion of the skin. We must be careful to keep our patient cool. During the "heated term," as it is called, the air within the house is often cooler than that out of doors; select then the coolest and airiest room of the house; not under a slate or tin roof, but on the first or second floor of the dwelling, and keep the child indoors as long as the air outside is hotter than that inside. Select a room with as little furniture and as few occupants as possible, clean floors, and bare of carpeting, and keep the bed in the centre of this room. Use a hair or air mattress, and keep the child out of the hot arms or lap of the nurse. Remember, when he is lying on the lap of the nurse, he is lying on a bed of the temperature of 99°, and possibly not always a sweet or cleanly one. Let his dress consist of one light cotton garment loose and short; keep a thermometer in the room, and as long as the mercury remains in the neighborhood of 90° do not change his clothing. When the mercury falls below 80°, whether by night or day be ready with a little slip of a more substantial sort, and a thin flannel bandage for the bowels; and put them on at the slightest indication of coolness of the surface or extremities. When the temperature out of doors falls, and becomes more pleasant than that of the house, take the child out if a proper place can be secured free from wind and dust and unsanitary surroundings.

Under such circumstances, let him remain out of doors as much as is practicable between sunrise and sunset. To those who believe that the disease belongs exclusively to city life, the question of at once sending the patient to the country will arise. Many a little sufferer is sent off at the sacrifice of comfort—not only its own comfort, but the comforts of friends and attendants—to some country farm-house to languish out its little hour of life, and to be returned per express for burial. The country farm-house has oftentimes surroundings equally unsanitary as those of the city residence. Moreover, malaria has its especial abiding place in the country, certainly so in a country badly drained and badly tilled, as many country places are; and a new element of danger will thus be added to the factors that endanger the child's safety. When it is practicable to take the child to the seaside or to the mountains, and to find in either comfortable lodging place, then it may be very advisable to make the change, and we need not hesitate to advise it.

Upon the question of diet a folio might be written, and then the inquirer be lost in a summer's search through its leaves, looking for the best and most unexceptionable method of feeding the infant. From the publications of the authors, and from the testimonials of the chemists who have analyzed and reported upon the various foods that are put forth for the nourishment of the little ones, it would seem impossible to go amiss in selecting a dietary. A wayfaring nurse, though a fool, would not err therein. But, unfortunately, their testimony (the chemists') do not agree. Mr. Albert R. Leeds says the perfect solution of the problem is to be found in the modification of cow's milk by chemical processes, so as to make it physiologically equivalent to human milk, and that the solution of this problem is not far distant in the *future*. But it is "in the future," after all, unfortunately for the *present* baby. For the *present* baby, then, we must consult our ingenuity and our common sense, and the experience of the many mothers and nurses who are rearing children by the hand, and of the many doctors who are striving to aid them and to guide them aright. Of course, the most satisfactory article of artificial food for the infant, that which more nearly corresponds with the food which it ought to get from its mother's breast, is cow's milk; and if we could always start with freshly drawn, pure, unadulterated milk from the healthy cow, we could often so nearly "humanize" it as to fit it at least for the healthy infant's stomach.

Here we are at once confronted with two difficulties: First, the difficulty of procuring pure milk from the healthy cow; and secondly, the dyspeptic and enfeebled condition of most children when deprived of their natural sustenance. The former difficulty overcome, a judicious and careful treatment of the milk of the cow can cause it so nearly to approximate in character to mother's milk that an infant of ordinarily good digestion can be very well nourished by its use. Chemists, with great unanimity of analysis, give us the points of difference between the two, and we can readily adjust them to the necessities of the young child. A great majority of children will readily appropriate the pure milk of the cow to which one-third of water, a pinch of salt and a teaspoonful of sugar of milk, or even cane sugar, has been added. If casein clots appear in the stools, then a still further dilution with water may be practiced, and the addition of a tablespoonful of lime water to the cup of tea. If this disagree, then the formula of Dr. Meigs: Two tablespoonfuls of cream, one of milk and one of lime water, with three of sugar water, the latter being made by dissolving 19¾ drachms of sugar of milk in one pint of water, and being kept always ready in a refrigerator or other cool place, thus imitating nature. This should be fed to the child, not from cups or spoons, but from the nursing bottle with "black nipple" of gutta percha; and it should be given every two or four hours, according to the age of the child, and in quantities not too great to overload the stomach—from two and a half to four ounces at a feed. One great reason why so many children reared by hand, as it is called, fail to thrive is that so many suffer from summer compliant. One great reason why so many pay the forfeit of early death is that they are *over-fed.* The healthiest infant, from six to nine months old, fails to draw, on an average, from the healthiest mother more than a pint and half in twenty-four hours, whilst the bottle-fed infant will often take as many as four pints in the same day. It will be necessary to keep two or more bottles with nipples for the same infant, that when one is in use the other may be emptied, scalded, and placed in a solution of bicarbonate or salicylate of soda.

But, supposing that pure, sweet and unadulterated cow's milk can not be gotten daily; and such milk rarely can be gotten in cities of any size, what then? We prefer in place of it, *condensed milk;* and in eight-tenths of the cases of infants fed by hand, (bottles), I recommend condensed milk. One teaspoonful of condensed milk, fourteen of warm water and one of lime water, "with a pinch of salt and a pinch of sugar" make one good feed for an infant three or four months old. Sometimes well-boiled barley water or water from Indian meal well boiled, may be made to substitute the warm water. If the child suffers much from constipation, not an unusual result of dry feeding—or if it seems more feeble and less well nourished than ought to be apparent, then I direct a spoonful or two of Nestle's or Mellin's food to be added to the pint of tea; preferably the latter, though I suspect that the most of these foods have but little the advantage, one over the other, in spite of the elaborate comparative tables published by rival companies. A most excellent mode of fitting the milk of the cow for those infants with feeble powers of digestion is recommended by Fairchilds, namely, that of peptonizing it; and a peptonic powder with directions is furnished for that purpose. But the average nurse here in this section of country cannot, or will not, exercise the requisite care and intelligence to properly prepare the tea, and it is almost invariably overdone and made bitter.

In only exceptional cases have I found it advisable to use this method.

In chronic and protracted cases of summer complaint, in children from eighteen to twenty-four months of age, who have their deciduous teeth or most of them, bread, leavened or unleavened, with sweet, fresh butter, is an excellent food. Few articles are easier of digestion or afford more healthful nutriment. If there be a craving for meats, as is often the case, tender mutton or beef broiled half done will often be taken with great avidity. But they should be scraped or forced through a collender by rasping, and the child allowed only such portions as are thus taken off from the mass. I am in the habit of allowing such children, of vegetables, the tomato, raw and served with a little vinegar, salt and sugar; and the roasted sweet potatoes. I regard these not only as innocuous, but furnishing that variety of food so necessary to proper nutrition in the human subject. In some sections of the Southern States, the sweet potato is regarded as almost specific in chronic summer complaint, and the first appearance in the markets of this edible root is anxiously looked for. The peach and the dew-berry, I also allow, if ripe and freshy gathered—and have never seen any evil effects result from either. In those protracted or frequently recurring cases of summer complaint—where the emaciation is often extreme and the integument seems hanging upon the bones of the little patient as if ready to be slipped off at any moment, I know of but one remedy promising much relief: Cod liver oil, if the stomach will bear it; if it will not, then the same remedy by inunction often promises the most favorable results. I have recorded a case elsewhere (Clinical Reports from Private Practice, 1873) of an infant, æt. 12 months, who had become so emaciated that the convolutions of the bowels could be seen through the abdominal walls, and whose general appearance was more that of a superannuated half-starved monkey than of a human baby, in which the potent and persistent use of cod liver oil for a few months produced the most incredible results. It nearly doubled its weight in less than six months. In this case the child was given a teaspoonful of the oil once or twice a day, and then a tablespoonful was poured down the neck in front and behind daily, and the child's clothes kept saturated with it. The best substitute for the cod liver oil is fresh butter, just taken from the churn, before the milk has been separated from it, or the salt added. Many children take this with avidity, eating it by spoonfuls, and I have known excellent results follow its use.

32 Union St., *June* 26, 1889.

ARTICLE II.

HERNIA.

A Comparison of the Various Methods Adopted for its Cure; inviting Discussion of their Respective Merits.*

By CLAUDIUS H. MASTIN, M.D., LL.D., Univ. Pa.,
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The radical cure of hernia is a subject of sufficient importance not to require an apology for introducing it before so learned a body as this Association; especially so since the purpose of this paper is to elicit discussion, thereby bringing out the views and experience of its fellows, rather than to offer anything new or original upon a subject which has, within the past few years, engaged so much thought and attention in the surgical world.

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* Read before the American Surgical Association, at Washington, May 14, 1889.

From the earliest history of our profession to the present day the cure of hernia has occupied the study of the masters of our art, and been the fertile field in which the quack and the charlatan have reaped their richest harvests. From the days of Cornelius Celsus to the time when Joseph Lister opened up a new era in surgery, all kinds of methods have been resorted to for the relief of this malady, which is as universal as the race of man; a malady to which the prince no less than the beggar is liable, and which more completely invalids the sufferer than almost any infirmity of like common occurrence; an infirmity frequent in infancy as in old age, in both sexes and all stations of life, and from which large numbers die annually.

To evidence its frequency, we quote from statistics, and show the appalling figures taken from the "Volume of Mortality and Vital Statistics" of the Census Bureau of 1880. Out of 756,893 deaths taken at large, 1 death out of every 600 was from hernia; out of 1,236 deaths from hernia alone, 141 were of young children less than one year of age.

In France, M. Malgaigne, investigating the subject, arrived at the conclusion that one out of every thirteen Frenchmen was ruptured; whilst M. Arnaud, who was engaged in a similar research, made the ratio greater, and estimated one in every eight as having hernia of one variety or another.

The tables compiled by Dr. Baxter, of the U. S. Army, show that out of 334,321 persons examined by recruiting officers for admission into the U. S. Army during the late war between the States, 17,226 were found with hernia and rejected; that in the short space of two years 38,132 were invalided on account of hernia and discharged. We have no means of reference as to the number rejected from the Confederate Armies, but by analogical reasoning we are justified in believing the ratio of cases was nothing less.

In Great Britain, George Hamilton of Liverpool, estimates that in England alone there were no less than 1,250,000 persons suffering from hernia; and the records of the London Truss Society show that that they have issued, in twenty-eight years, to the indigent poor of London, no less than 83,584 trusses for the relief of this malady; and it is stated that there are two factories in the City of Philadelphia whose average sales amount to 250,000 trusses per annum. Still, in our vast population spread over the great area of this country, how many thousands of the poor, black and white, are afflicted with hernia, and eke out a miserable existence without any mechanical support whatever, save some rude contrivance of their own fabrication?

With such an array of facts before us, we may be pardoned for looking at the past and gradually tracing up the improvements in the work which has been done for the permanent relief of this affliction, and for indulging the hope that under the scientific improvements which surgery is drawing around herself, we may safely predict that the day is not far distant when the radical cure of hernia will no longer admit of a doubt, and that another opprobrium of our art will be relegated to the misty past, when the palliative support of the bandage and the truss will give place to the more rational treatment by the knife, used under the security of antiseptic precautions.

The unsatisfactory results of palliative treatment naturally called for more radical methods, and as far back as the time of Celsus we find this elegant author teaching the use of the knife and the ligature as the means by which the sufferer is to be relieved. As he was the first who described the surgical relations of the investments of the groin, it was very natural that he should have given much attention to the relief of so common a malady as hernia. This he did, but his method consisted of little more than cutting down upon the sac, dissecting out the membranes, then cauterizing and closing the parts with a suture. If the patient was a child, he cut away the testicle, but preserved it in men; when the omentum occupied the sac and he was unable to return it, it was excised after being carefully ligated.

Then came Paulus Ægineta, who makes no reference to the work of Celsus, but used the ligature, as did Galen, tying the cord together with the skin at the external ring. The Arabian surgeons had long been using astringents and the actual cautery as topical applications; indeed, for long ages the potential cautery was the favorite remedy.

The next remedy we hear of is the "Royal Stitch," attributed to Maupas, and so-called, because it qualified the king's lieges for military service. It was done by opening the canal, and then stitching together the sac and the pillars. Lafranc had resorted to castration, and then plugging the wound and the canal with the stump of the cord; whilst Guy de Chauliac was using caustics, inviting suppuration, and insisting upon rest in bed until consolidation of the tissues was accomplished.

About this time Bernard Metis operated by ligating the cord with a gold thread, and then completing his incision. This last was very similar, in many respects, to the operation of Ambrose Parè—known as the "Punctum Aureum"—which consisted in passing a gold wire behind the sac at the external ring, including the cord, and then twisting it tight enough to close the hernial sac, yet not sufficiently so to produce strangulation of circulation in the testicle, thus showing some little respect for the integrity of the seminal gland, which, during the seventeenth century, was so often cut away with the sac that Dionis asserts:—"The itinerant operators were in the habit of feeding their dogs with the organs which they removed!"

If time would permit, it might prove interesting to follow up the various modifications resorted to by the old surgeons, to show what was done in the Middle Ages by the traveling herneotomists, gradually lead the reader up to the time when Pierre Franco's treatise revealed the true nature of hernia, and paved the way for its proper treatment; but we must now content ourselves by referring those who are curious in these matters to the interesting history by Sprengel. It will, for the present, suffice our purpose to group them together as follows:

1st. The Celsean method, incision, castration, cauterization and bandage.

2d. Cauterization by acids and moxas.

3d. Topical applications, as poultices and plasters.

4th. Ligature of the sac.

5th. The Royal suture.

6th. The scarification of Le Blanc.

7th. Invagination without suture.

8th. Invagination with suture.

The most important of these are the two last, since they form the basis of the operations of Gerdy, Wützer, and other operators of later years.

Schunmucker, Langenbeck and others had been in the habit of exposing the sac by a free incision, and then ligating it without inclosing the cord; but a mortality of 3 in every 10, in the hands of Arnot, Armont and Petit in France, and Sharp and Abernethy in England, caused the operation to fall into disuse, as it was considered dangerous, and as such was abandoned. Resort was now had to the "truss cure," using a strong and tight spring with a hard pad, which, failing in its object, in turn fell into disrepute.

The next in order came the dealing with the interior of the sac itself; the introduction of solid substances, threads, sponge, isinglass, little bladders of gold-beaters' skin, by Belmas, Schah and Riggs; the use of stimulating injections, as cantharides, iodine and such like articles, were proposed by Velpeau, and used by Pancoast in 1835, and followed by fatal results, although in 1840 it had become the favorite method in Paris. In America, Dr. Jayne, of Illinois, used it extensively, and, according to his reports, with the most favorable results.

About this time the secret method of Heaton came in vogue, and numbers of successful cures were reported. However, as his method was not at first given to the profession, it did not become in general use, although the treatment by injections was revived, and numberless trocars, canules, syringes, etc., were invented by Ricord, Jobert, Nélaton and others, and many began the cure of hernia by injections. At first only cures were reported, but then deaths began to follow in quick succession, and the operation lost favor. The substance used as the injection by Heaton was not known, and consequently those who attempted to cure hernia by injections were not as successful as he had been with his mild fluid of Quercus Alba. After years had passed away, Dr. Joseph H. Warren, of Boston, obtained from Heaton his formula and gave it to the profession. Dr. Warren then invented a screw-syringe and began the treatment of the disease. He subsequently wrote and published an interesting brochure upon the method of Heaton as improved by himself, and recorded a number of cures. Notwithstanding his success, I am induced to think the operation has not gained very general favor, and, with the exception of Dr. George W. Gay, of Boston, I am not apprised if it is used at all at this date. Dr. Gay has had a large experience with the method, and his success has been reported as great.

The subcutaneous operation, which, in the form of invagination with suture, had long been in vogue even among the ancients, was revived by Gerdy. Using his finger, he pushed up the integuments into the canal and fastened them with a suture; but his operation failed and was abandoned. Then Wützer substituted a wooden plug, with a clamp and a flat needle; this, in its turn, was discarded, more on account of failures than for the mortality which followed. Rothmund, Sigmund and Spencer Wells used it extensively, and their failures were attributed to suppuration and descent of the invaginated portion; their apparent cures were temporary, and the method soon fell into discredit.

A modification of this method by D. Hays Agnew has been advocated, but I do not think it has met with general favor. Neither has the operation of Spanton, with his "Strephòtome"—a sort of cork-screw needle with which he hems up the pillars subcutaneously, using a catgut thread. He reported thirty-four operations with no deaths, but showed no evidence of permanent cures. A variety of such methods have been introduced, none of which have stood the test, and they have vanished without leaving a trace of value behind. Such, for example, was the operation of Fitzgerald, of Australia, who laced together the pillars with a gold thread; as also the double-eyed curved needle of Greenville Dowell, of Texas, were modifications of the subcutaneous idea, having no especial points of interest, and not the least appreciable merit.

At last a combination of the open and the subcutaneous methods originated with John Wood, of London, and revived the idea of a radical cure; probably it gave more impulse to the subject than anything which had been done in many years; but since we are all familiar with the details of his operation, I shall not weary your patience with a description of it. He estimates his successes at sixty-five per cent. of all operations done, and in the cases of children alone he places his ratio of success even greater. On this account he confines his operations to persons under thirty years of age, and in his selection of cases he grades them in this order:

1st. Children over five years of age who are not relieved by the use of the truss.

2d. Young adults over fourteen who are seriously impaired by the hernia. He bases this rule upon the reports of the Registrar General of Great Britain, which show that in 1,119 deaths from hernia 23.5 per cent. had been subjected to operations for strangulation—the average rate of mortality after kelotomy in large hospitals being 48.8 per cent., and the ratio increasing with age.

3d. All reducible herniæ having thick sacs.

4th. All favorable cases of strangulation.

5th. Certain cases of irreducible herniæ where there is a tendency to strangulation.

His conclusions, drawn from his individual experience with the operation, do not differ in any material manner from the conclusions arrived at by other operators.

A. W. Mayo Robinson, F.R.C.S., of England, in a report to the British Medical Association, held at Dublin, in August, 1887, gives a series of twenty-six operations by Wood's method, in one-half of which cases the operation was done after the reduction of strangulation; thirteen after the truss had failed to accomplish its purpose, because of irreducibility, or from the large size of the hernial apperture, the patients being incapacitated from attendance upon their duties. In all but two cases the sac was excised after ligation of its neck, the canal only sutured in those cases where it was very open; strict antiseptics, and, as a rule, not more than one or two dressings were required. The ages of these patients varied from three months to seventy-six years, and the ruptures were ventral, femoral, inguinal and inguino-scrotal. In only one case was it deemed necessary to use a truss after the operation. Two cases died from bronchitis, and the necropsy clearly proved the operation had been successful—since the site of the hernia had healed, the intestine regained its former condition, and no peritonitis had ensued. One of these patients evidently died from the ether inducing acute bronchitis.

The conclusions from his series of cases, as well as from the observations of others having experience with the operation are:

1st. That hernia urgently demands treatment.

2d. That no one operation possesses such marked superiority as to monopolize the field.

3d. That the one most to be relied upon is that of excision of the sac after ligation of its neck as high as possible, with suture of the pillars of the canal and ring whenever widely separated.

4th. That when done with proper antiseptic precautions it is both safe and efficient, and if the sac is properly separated from its surroundings before it is emptied, the operation is both shortened and simplified.

But all of these operations, with the exception of one or two, have been abandoned as either dangerous or unsatisfactory, since the introduction of antiseptic principles have marked a new era in the treatment of the affection. Whilst only a few years ago the subcutaneous operation was the only one meeting with favor, now, under the rule of antisepsis, surgeons everywhere are investigating the subject, and devising new and bold operations for its cure, and recent statistics of the operation done under the antiseptic method show the low rate of mortality which has been attained. For example, at Bâle the results of 136 operations mark the mortality of non-incarcerated herniæ as low as 3.6 per cent., whilst, under other methods, in the hands of Ségond and Liesrink, 273 operations had a mortality of 5.1 per cent. Evenen and Erdman report the results of 106 operations, done antiseptically, in which the sac was ligatured and removed, and then the pillars closed by suture, with absolutely no deaths; it is true there was a recurrence to a small degree in 20 per cent., yet so small was it that the success may be considered established. At the Sabbatsberg Hospital, in Sweden, where the sac is ligated at the neck and then cut away, all under mercuric bichloride and iodoform, in six years 300 cases were admitted, of which number 200 were treated by the open method, with not a single fatal case; although some of the herniæ were very large and exceedingly difficult of management.

Surely such results must prove convincing to the most skeptical, and should tend to inspire confidence in the progress of our art! They stand like beacon lights along the path-way from art to science.

"In overlooking the field of modern surgical development, so much is seen of the inductive process by which ingenious theory is constructed as the apology for novelty of practice, that we regard with pleasure the more Socratic method by which a practice appears as the outcome of a great scientific principle," and thus it was when Czerney brought the subject of the open cure of hernia before the Berlin Congress in 1879, that the surgeons of Europe were willing to accept it when they found it based upon the scientific principle of the germ theory of disease and its antiseptic treatment, they recognized that the chief value of the open operation was its safety—due to the teachings of Lister.

Since the method introduced by Czerney may be considered as the starting-point of a new and distinct operation, I ask permission to run over a hasty description of the same.

After a most careful cleansing with a mercuric bichloride solution of 1-1000, and the usual method of scrubbing with soap and ether, the parts are protected by towels saturated with a bichloride solution, 1-2000, leaving only space sufficient for the incisions to be made. The incision, six inches in the axis of the tumor, opens the integuments, and a careful dissection exposes the sac; all hæmorrhage is carefully arrested by Kocher's cat-gut ligature. The sac is now separated from the adjacent tissues, and the index finger passed along the neck until the margin of the internal abdominal ring is reached; after this, gentle but firm traction is made upon the sac, so that it may be securely ligatured as high up as possible, thus obliterating the pouch of the peritoneum at the mouth of the sac. The sac is now opened, contents inspected, and if sound returned within the abdominal cavity, and the neck of the sac transfixed by a needle armed with a double ligature of stout silk, which is then tied tightly and the sac cut away below the point of ligation. The pillars of the inguinal ring are freshened and brought together by silver wire sutures introduced from within outward, and including the pillars with the external integument. By means of these sutures, and a few points of fine cat-gut interrupted sutures, the internal abdominal ring and the whole canal are obliterated. A rubber drainage-tube is introduced, and the skin wound carefully closed by a continuous suture of Kocher's juniper cat-gut. Iodoform with antiseptic bandages complete the dressing, of which no change is made unless the temperature indicates an elevation above 100° F. As a rule the wire sutures are removed on the twelfth day, unless otherwise indicated. Objection has been made to his use of a silk ligature around the neck of the sac, but there seems no valid reason why a properly prepared silk ligature should not prove perfectly innocuous. I am under the impression that Billroth advocates them in preference to cat-gut or any other material in this operation.

The paper of Czerney and the discussion which followed, made such a profound sensation that we may consider it as the beginning from which the open operation took its departure, and following it, all kinds of novel methods have been introduced and advocated. Scarcely a surgeon has considered the subject without suggesting some modification or alteration, and usually without any points of material difference.

Dr. J. Lucas Championniére, in a most valuable contribution entitled "Cure radicale des hernees," Paris, 1887, brought the subject before the French Society of Surgery, and elicited a good deal of discussion upon the merits of the operation. The main point of interest which he made was,—following the plan of Czerney,—the total removal of the sac forms the basis of successful results; he does not lay any stress upon the suture of the pillars, although he always brings them in apposition and sutures with cat-gut.

He reported ten operations as done by himself with no deaths and only one recurrence. He considers a mass of statistics taken from various sources as of no reliable value, whilst carefully prepared results from the hands of *a competent observer* of most importance. His own investigations lead him to assert that, if the operation is carefully performed under strict antiseptic precautions, it is not only absolutely free from danger to life, but that it should not be followed by any of the accidents or complications which frequently follow wound healing, because these complications are invariably due to imperfect antisepsis. Under the rule of antisepsis he considers the open radical operation as established upon a scientific basis, and that it surpasses all other procedures yet devised for the cure of hernia. If the patient is not perfectly cured, he is certainly none the worse on account of the operation having been performed, and, pre-supposing a recurrence of the hernia, it is necessarily smaller than before the operation, and hence can be more easily and comfortably supported by a truss or a bandage. He formulates the following indications as justifying the operation:

1st. All forms of irreducible hernia.

2d. Congenital hernia, with atrophy of testicle.

3d. Large hernia which cannot be retained by a properly-fitting truss.

4th. All forms of painful hernia.

5th. Herniæ existing in patients whose occupations subject them to the dangers of strangulation.

6th. Certain social positions which would make a person prefer an operation for a cure, to a palliative treatment.

7. In all cases where strangulation has taken place, and when a person is opposed to the appliances necessary in a palliative treatment.

Following the reading of this paper before the Surgical Society of Paris, in November and December, 1887, the most memorable discussion which probably ever was had upon this subject took place. The opinions of the surgeons who were present differed widely: M. Championniére was enthusiastic in the defense, whilst men of equal distinction combated the operation in no measured terms, and when the discussion closed so little had been accomplished that the subject remained still *sub-judice.* Championniére advocated closing the wound immediately, which was objected to by others on the ground that healing by granulation was the surest means of securing a dense cicatrix.

The conclusions drawn from the discussion, and offered by L. S. Richelot were to the effect that:—

1st. In inguinal hernia, as in all others, the resection of the sac is the main factor in the radical cure.

2d. That the operation is easy of execution unless there are adhesions with the intestine, or in cases of old herniæ which have become strangulated.

3d. That the resection of the vagino-peritoneal canal is always possible in congenital hernia with atrophy of the testicle.

4th. That resection of the vagino-peritoneal canal in hydrocele of the cord, when existing without hernia, should always be performed to prevent the descent of a hernia.

5th. The simple operation, without mutilation, which will preserve a young person from all the infirmities of the disease, should always be done in hydroceles and congenital herniæ just as it is done in acquired herniæ.

The same interest which had been aroused in Germany and France was also manifested in Great Britain, and at the meeting of the British Medical Association, held at Dublin, in August, 1887, there were a number of interesting and instructive papers presented which elicited much discussion.

Mr. Thornley Stoker considered the open operation as vastly superior, and in every respect, safer than the method of Wood or any other concealed mode of operation: that it was more easily performed since it required only ordinary care and skill, whilst all the concealed methods necessitated an amount of dexterity not attainable by all surgeons. He objected to leaving a wire in the wound in the open operation, because he thought it always interferes with the proper support of the parts after the wound has healed. He considered the best and most permanent success dependent upon the exudation and organization of lymph, with the consequent consolidation and drawing together of the parts assisted by the plug of twisted sac: that sutures do good only by exciting irritation, and thus producing exudation of plastic lymph, the tightness of a suture is of no value, but rather an injury since it induces swelling of the cord and testis.

He is somewhat an advocate of the method of Ball—which will be referred to further on in this paper—but modifies the same in a slight degree: his operation is by an incision extending downwards and inwards from the external abdominal ring as far as may be necessary; in infants and young children one and a half inches, in youths and adults from two and a half to three inches. The exposed sac should be very carefully disconnected from the cord and its elements, and then included between two strong antiseptic gut ligatures and divided between them: the lower ligature closes the tunica-vaginalis if it is a portion of the sac, whilst the upper one deals with the opening into the peritoneal cavity. Then the proximal portion is taken hold of by broad catch forceps and twisted until distinct resistance is felt.

The deductions drawn from his method were the following:—

1st. In young children the operation should never be resorted to unless milder measures have failed, or proved inapplicable.

2nd. That, on the ground of safety, certainty and precision, the operation by dissection should be preferred.

3d. That twisting the sac is a safe and efficient adjunct to the operation.

4th. That sutures, so far as closing the canal is concerned, serve but a temporary purpose, and their chief end is to excite a sufficent lymph exudation.

5th. That therefore they should not be introduced tightly, and in this way we will avoid testicular swelling.

6th. That the permanent retention of wire is unnecessary, hurtful and bad in theory as in practice.

7th. That uniform support should be given for some time after the operation, but that support should be gentle and without a pad, because the pad is liable to cause absorption of the lymph which is effused.

Mr. Kendal Franks advocated a very slight modification of the Wood's operation, and reported 22 cases in which he had operated successfully: the youngest being a child of fifteen months, and the oldest an adult of sixty-four years. One case of four years, one of six, and one of seven. Two did not exceed twenty years; twelve from twenty to thirty, and four between thirty and forty, with one of fifty years. He advised against the subsequent use of the truss or any support. If the cases stood the crucial test of time, his method is one of remarkable success.

Mr. Arthur E. Barker considered that the main questions involved in the discussion are, whether the procedures employed in the radical cure are devoid of risk: whether they are simple, easy of execution, and capable of wide application, and further, whether they fulfill the objects for which they were designed. The objects clearly indicated are:—

1st. To free the inguinal canal and both rings from the presence of the sac, and thus give room to accurately close the opening.

2nd. To strip the neck of the sac from the cord with as little disturbance as possible.

3rd. To cut the sac just outside of the external ring, and then reduce its tied stump accurately within the internal ring, and fasten it there by *the same ligature* which closed its neck.

4th. To close both external and internal rings, together with the entire length of the canal firmly with strong silk sutures.

5th. To leave the fundus of the sac undisturbed in the scrotum, so as to avoid damage to the cord and testicle and injury to the vascular and nervous supply.

6th. To secure primary union everywhere, so that the deep sutures shall remain unchanged and help to permanently close and control the rings and canal.

7th. To obviate the use of the truss in all herniæ save in the umbilical.

It is obvious that the proper disposal of the sac has been a mooted point with surgeons, and, as a consequence, there has been much difference of opinion as to which procedure is the best. With the sole idea of getting rid of this trouble, a novel method has been devised and much practiced by Mr. C. B. Ball, of Dublin. His operation is simple, easy of execution, and offers advantages which, to my mind are worthy of much consideration. With a narrow bladed, blunt pointed scissors, he isolates the sac completely from the adjacent structures which comprise the cord, then, aided by the finger, the separation can be carried up to the internal abdominal ring, and the peritonium loosened from its attachments for a short distance within the ring. Having ascertained that the sac is empty—by opening if necessary—grasp its neck with a broad catch forceps and gradually twist it up, while this is being done the left forefinger should be used to free the upper portion of the neck so as to ensure the twist reaching well into the abdominal cavity. In ordinary cases four or five complete revolutions are sufficient, but this depends upon the thickness of the sac, and the portion grasped by the torsion forceps : the twisting should be continued until the neck is felt to be quite tight, and until it is found that further torsion would produce rupture. The forceps are now transferred to an assistant who will maintain the twist until a stout catgut ligature is placed around the twisted neck as high up as possible, tied tightly and the ends cut off closely. Now, two sutures of strong aseptic silk are passed through the skin, at a distance of about one inch from the outer edge of the wound, then on through the outer pillar of the ring, through the twisted neck in front of the catgut ligature, then through the inner pillar of the ring, and out through the skin on inner side.

As these sutures effectually prevent the sac from untwisting, it *may be cut* off in front of them ; and then a catgut drain is brought out through a counter opening at the back of the scrotum ; after this is done the two silk sutures are closed over lead plates, which lie at right angles to the wound. If considered necessary one or two superficial sutures may be put in to close the integumental wound completely. Dry dressings are employed and retained by a double spica bandage which is in turn painted over with a solution of silicate of potash—this keeps the dressings in place and the parts effectually at rest. The operation being completed the dressings are allowed to remain for ten days or two weeks, at the expiration of which time the wound is commonly found healed and the sutures can be removed.

If, however the temperature should rise, or any discharge appear, the dressing should be inspected just so soon as the indications necessitate it. Of course the whole operation and its dressing, must be done under proper and careful antiseptic precaution.

An interesting description of this method will be found in the *British Medical Journal* of December 10th, 1887, this being the last paper written by Mr. Ball upon this subject. In a personal letter of February 21, 1889 he writes me that his total number of operations to that date were thirty-five, and out of that number, only one had terminated fatally, which death was from tetanus supervening on the seventeeth day, after all the dressings had been removed, and the wound which had run an aseptic course had perfectly healed. He estimates ninety per cent. of the cases recover so that no truss is necessary, whilst in the others there is nothing more than a very slight protrusion at the upper ring which is easily controlled by a light truss or support. He believes that the best results are obtained from very large herniæ, and hence he operates only on those which are of considerable size, unless there are some other special reasons for twisting relatively small herniæ. His method has been resorted to only in inguinal and femoral ruptures, and he has had no experience with the umbilical form—still he has no doubt of its easy performance and probable success.

Objections have been urged against the operation upon the ground that there is danger of including a segment of intestine or a portion of omentum within the twist, and thus producing a concealed strangulation; but this is without foundation and should not occur in the hands of a judicious and careful operator.

The method of W. Mitchell Banks, of Liverpool, has attracted much attention, and probably, with that of Macewen, of Glasgow, are more relied upon at the present time than any others. In brief—it consists, in inguinal hernia, of exposing and opening the sac, returning its contents, and tying and cutting away all adherent omentum; the sac is then drawn out as far as possible and ligated with cat-gut as high up on the neck as practicable and cut away; then the pillars of the ring are brought together by one, two or more silver sutures which are to be left permanently in position. In femoral herniæ the clearing and removing of the sac constitutes the whole operation since no attempt is made to close the femoral opening. In vertical and umbilical hernia the use of the whole or a part of the sac to close the aperture which, as a rule, is large, with no effort to approximate the edges, since none seems likely to be permanent, appears to be the proper course to pursue.

From the reports of this operation we draw the following conclusions: When a man can wear a properly adjusted truss, it is best for him to do so.

That the operation is seldom necessary in children since a well fitting truss will, in most cases effect a cure; but in the poorer classes with large hernia the operation is appropriate and should be done.

In small femoral hernia with adherent omentum, the operation should be advised and performed, because in such cases the patient is never safe from strangulation, and because the curative operation is as safe as any in surgery. This same rule applies to inguinal hernia where adherent omentum and large size of the protrusion prevents the use of a truss, and as a consequence the patient is useless and unhappy. That as a rule, no one should be subjected to an operation who can wear with comfort a truss which keeps his hernia securely in position. Mr. Banks advocates the use of a truss after operations, and does not believe it will destroy adhesions, as some surgeons assert it will. His experience has taught him that in almost every case of failure of the operation, the patient had neglected to wear a truss because he felt confident of a cure; since failures are common Mr. Banks objects to the term "*radical cure*," and prefers to term it the "*surgical treatment of hernia*." To guard against failures he advises against trimming or scraping the inguinal canal, because in large herniæ it is so thinned that there is little left to scrape; the hole is generally large and it is impossible to pull the pillars together by sutures; his use of the suture is simply to hold the parts together temporarily while the wound is healing so as to prevent any protrusion from coughing or straining, because in large operations he leaves the wound quite open.

Although Mr. Banks has been cited as authority upon this operation, and a warm advocate of it, he, in reality, is decidedly opposed to being considered a partizan of this or any other method, and does not endorse its merits as a *curative* measure. His operations may be grouped into three tables showing the nature of cases he has subjected to the treatment with results.

Table I. Moderate size non-strangulated, - - - 52 cases,
With one death due to operation.
Table II. Very large, not capable of support by truss, 16 cases.
With four deaths due to operation.
Table III. Strangulated hernia, - - - - 38 cases.
With three deaths.

Combining Table I. with Table III., giving 52 cases of moderate size, non-strangulated, with 38 cases of strangulated hernia, the results were: 24 deaths; 44 cured; 7 partial successes; 1 probable success; with 14 absolute failures.

Of Table II., the 16 cases of very large hernia, 3 cases were absolute failures, 6 were considered partial successes, since they were enabled to follow their occupations, whilst before the operation they were absolutely unfit for work and therefore useless. Of the remaining 7 cases in the table he makes no reference to, and hence we are justified in classing them as failures. To sum up, we find that out of the 106 cases operated on 68 were non-strangulated, whilst the remaining 38 were strangulated, giving as a result 28 deaths, 44 cures, 17 absolute failures, 17 partial cures. The important point of consideration must be made between the strangulated and non-strangulated cases, because it is obvious that, as regards the question of mortality, we must keep these two classes of cases quite distinct, whilst, in a curative point of view, we are justified in drawing the same conclusions from both.

The last and most recent improvement—if it can be regarded as an improvement—is the operation of Mr. Macewen, of Glasgow; this procedure is doubtless so familiar to each of you, that I will not consume further time by detailing the steps of the method employed, the chief points of which are the use of stout catgut which is left in the tissues; and the utilizing of the crumpled up sac as an internal abdominal pad to prevent the descent of the hernia; with restoration of the valve-like arrangement of the inguinal canal.

His operations were done under the strictest antiseptic precautions used both before and after the operation. From his paper published in the *Annals of Surgery*, of August, 1886, and his subsequent article in the *British Medical Journal*, of December 10, 1887, we quote the results of his method in his own hands, showing number of cases operated upon, without any record of deaths:

Table I. Radical cure of inguinal hernia submitted to his operation, - - - - - - - 49 cases.
Table II. Strangulated inguinal hernia followed by his special operation, - - - - - - - 16 cases.
Table III. Radical cure of femoral hernia submitted to his operation, - - - - - - - 2 cases.
Table IV. Strangulated femoral hernia, followed by his special operation, - - - - - - - 13 cases.

Making a total of 80 operations without a death.

With such a record the operation stands upon its own merits, and, in the hands of its author, marks a wonderful advance upon anything yet devised for the cure of hernia.

There is, however, a grave objection to the method, for it is complicated in its details, and as a consequence is difficult of execution, requiring a special dexterity which is only attainable after long practice, hence it is not likely to come into general use among the rank and file of surgeons. His after treatment consists in absolute rest under the strictest antiseptic dressings for at least fourteen to twenty-one days: at the expiration of which time the primary dressings are changed for looser coverings, and the patient kept in bed for four to six weeks, at the expiration of which time the patient is permitted to rise from bed, but not allowed to engage in any work until the end of the eighth week, and is cautioned not to strain or lift any heavy weights until the end of the third month. After this time the patient is left to nature, and not required to wear either a truss or bandage unless his occupation be of a laborious nature, and then only a very light truss as a precautionary measure.

The last method which claims our attention is the operation of Dr. McBurney, of New York, and since it has been engaging much attention within the past three years, it is deserving of more than a passing notice, especially so since it has some points of difference from the other procedures which have been spoken of. Under the most careful antisepsis he opens the entire canal up to the internal ring, loosens up and ligates the sac as high upon its neck as possible: this being done he closes the upper and lower angles of the integumental wound, and then packs the entire canal with gauze and iodoform leaving it to heal by granulation. He never permits his patient to wear a truss after the operation, as he considers the use of it positively injurious.

To March 2, 1889, he has employed his method in thirty-six cases, with only one fatal result, which he attributes to alcoholism. In three cases the wound became infected and the healing was slow; still there was no general sepsis in any of them. In one case an orchitis followed; and in one other there was a relapse of the tumor which he attributed to insufficient ligation of the sac.

Dr. McBurney tells us that he has followed up the history of thirty-one of the cases, and the result has been thus far perfect in each one. Of the remaining four cases, two could not be found, and two were still under treatment.

He claims the following advantages for his method:

1st. It is the only method by which the sac is completely obliterated.

2d. The walls are firmly united throughout their entire length.

3d. The wound being open, septic complications are avoided.

4th. The rapidity of execution renders the operation applicable to a great variety of cases.

The operation has gained considerable favor in New York, and is spoken of very highly by those who have had experience with it; and doubtless it has points of interest and value, but there is such similarity between it and the operation suggested and performed by Reisel, that we cannot attribute it fairly to Dr. McBurney. It was to Reisel, Czerney, Nussbaum and Sewel that we are indebted for the first real advances which were made in the cure of hernia. Reisel's method was to open the entire canal, tie the sac as high as possible, and leave it to fill up the canal whilst it healed by granulation, to this Dr. McBurney added the tampon of gauze. Czerney, Nussbaum and Sewel ligated the sac and then cut it away. Dr. McBurney opens the sac and passes his finger far up into the internal ring, whilst his assistant takes the apex of the finger as a guide and throws the ligature just above it. This last is a procedure which has been described by Chauncey Puzey of England, who sometimes transfixes the sac, "*just above the tip of the finger*" with a large needle armed with stout catgut, ties one side of the sac, so as to control it, then carries the same ligature around the whole neck of the sac and ties it very firmly just above the first ligature to ensure against the slipping. He differs from Dr. McBurney in that he does not leave the canal open for granulation, but closes the pillars with chromacized catgut; and his most important adjunct to success is prolonged rest for at least two months, and then the use of a light truss or bandage, with a large soft pad for months.

This about covers the methods at present in use for the permanent cure of hernia, and they show a similarity of purpose in dealing with the sac as the main factor in the success of the operation.

The operation of ligature of the sac at its neck, with suture of the pillars of canal and ring, may be considered an established surgical procedure. Still, being comparatively a new operation, a discussion of its merits will be of practical value in leading to further improvements, and with them permanent success of the operation. With the present lights before us, the most important point in the operation appears to be closing the neck of the sac as high up as possible, so as to effectually seal up the opening into the abdominal cavity. To do this completely it is necessary that the sac should be carefully separated from the adjacent tissues, and this is not always an easy matter, since oftentimes the true sac is obliterated and a new sac formed in the fibrous tissue, with the vascular and nervous distribution blended in such a manner as to render the dissection most difficult, if not impossible. In such a case Macewen's operation could not be performed, and it would be impossible to twist the sac as recommended by Mr. Ball. This objection, however, does not obtain of crucial and umbilical herniæ. Still, since inguinal is the most frequent of the herniæ, it is of importance in them. In the congenital cases it is much easier to separate the sac, and hence more possible to do a complete operation; but since in young children the truss, properly applied and long continued, until the abdominal parieties have become so developed as to increase the obliquity of the canal will in most instances produce a permanent cure, all operative procedure in children should be considered unwarrantable. In those cases, however, where an imprisoned testicle complicates the condition, the operation is unquestionably proper and the removal of the testicle justifiable, and for the simple reason that the presence of the gland in the canal predisposes to the descent of the hernia.

Since the main point in the success of the operation appears to have been the proper disposal of the sac, it is not astonishing that operators who have given it their attention should have adopted diverse methods, each one of which has the same end in view. Whilst Ball twists it, Macewen tucks it up; Hardie insists upon the importance of inclosing the *transversalis faschia* with the sac in the ligature, and I. D. Bryant splits the pillars on either side and weaves in the sac; Annandale opens the canal, ties the sac, cuts it away and stitches the opening. On the other hand, Stokes opens the sac, and then, stitching the neck, the canal and pillars together, he leaves the sac in position; Banks opens the sac, ligates the neck, cuts away the fundus and sutures the pillars; Alexander, of Liverpool, opens the canal, ligatures the sac flush with the peritoneum internally, then divides the neck below the ligature, leaving the sac in the canal without suturing the ring; Mac Cormac advocates this plan, whilst Buchanan cuts down to the sac, slits it up longitudinally on each side of the cord, divides the front part horizontally, rolls up the upper part, with which he plugs the internal ring, and turns down the lower half to form the *tunica vaginalis*.

From a comparison of all the methods, it is apparent that no fixed rule of procedure is established, and, although the radical operation is a marked improvement in the treatment of hernia, whether free or strangulated, we cannot consider it perfected, because the methods hitherto resorted to have not proved radical in result.

The operation is ideally correct, but the question arises whether, with the uncertainty of success, the risk justifies the operation; especially so if the circumstances of the individual are such that he can content himself with the use of a properly adjusted truss?

SELECTIONS.

ON THE SIGNIFICANCE OF COUGH, WITH REFERENCE TO TREATMENT.* By Dr. W. H. Thompson, New York, Professor Materia Medica and Therapeutics, University Medical College, New York; Physician to the Bellevue and Roosevelt Hospitals, New York.

In this climate there is scarcely anything for which a physician is so often asked to prescribe as a cough. Not only is it something distressing to have, but to many persons it is such an ominous thing to bear that its prompt removal is earnestly sought as if otherwise it were a note of death. There is much to justify this dread, and practically physicians are obliged very soon to stock themselves with a list of prescriptions for cough. I doubt also whether any other kind of prescriptions are so little varied, after some years' experience, as each one's cough mixtures. They become almost as routine and habitual to the doctor as any adult habit, and are very apt to last for life. Before falling into such practice, however, it is worth while to study this symptom by itself, for when its very diverse origin in different cases is thereby revealed, then not only its varying significance according to its origin becomes plain, but the practical deduction follows that its proper treatment should be anything but a matter of routine. Moreover, a brief inspection of the cough remedies which are usually classed in our text-book under the name expectorants should suffice to indicate that often they cannot relieve this symptom in the same fashion, for among so-called expectorants we find included medicines which lessen the excitation that leads to cough, and others which are supposed to stimulate it; some are given to promote secretion and others to diminish it; others again to alter it, or others to disinfect it. Therefore, it follows upon this that we cannot judge the merits of any agent recommended for this respiratory disorder without a preliminary recognition of the different causes or conditions which occasion cough.

We would begin by defining cough as a reflex act, whose single motor or efferent mechanism is called into play by a great variety of efferent impressions. Its one proper object is expectoration, but much oftener than any other reflex act of the body it occurs without its object, and is therefore useless; so that one of the commonest indications for the physician is to suppress useless cough, and to allow only that which will accomplish its natural purpose.

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To support this statement I will now proceed to enumerate various kinds of useless or non-expectorant coughs, none of which subserve any good purpose, and which therefore we should aim directly to arrest. My list includes no less than fourteen kinds which are more or less common, and doubtless gentlemen present can add to their number. Before describing them, however, I would draw attention to an important fact in my opinion, namely, that all non-expectorant coughs have one marked feature in common which will always serve to distinguish them from the cough which serves a good purpose, namely, the true expectorant cough. That distinctive character of all useless coughs is to be found in their sound, which is specifically different from the sound of any expectorant cough whatever. The sound of a non-expectorant cough, whatever its kind or origin, is always single, while an expectorant cough is never so. That is to say, the non-expectorant cough, no matter how constantly or rapidly repeated, consists in a series of separate acts, and hence may be likened to the separate blows of a hammer. They may be few or many, very loud or just audible, occurring only now and then or in quick succession, either for a brief period or in prolonged paroxysms, enough to prevent all rest or sleep, and yet each cough is as distinctly independent of the other as the strokes of a hammer are, whether they be few or many. An expectorant cough, on the other hand, is never single. It may consist of only one act of real cough, but if so it is immediately followed by a sound which indicates the clearing of the pharynx, which is the last step in expectoration as far as the respiratory tract is concerned. Generally, however, it consists of a number of coughs, in which the sound distinctly connects each act both with the one which precedes and with that which follows it, so that instead of resembling the strokes of a hammer, it is more like the passing of the links of a chain over a pulley, or in some cases like the sound of a saw. When once the attention is directed to this difference it becomes easy to recognize it, and then to make use of it both for diagnosis and for treatment.

Two instances of the kind will suffice for illustration. One morning, while conversing in my consulting-room with a brother practitioner, we were both struck with the loud coughing of a patient who was seated in the adjoining waiting-room. Having not yet seen this patient, who with her husband had just come in with a letter from a physician in the northern part of the State, I remarked to my friend that there was some one out there who had a pronounced enough cough, but without seeing her I ventured to say that she had nothing the matter with her lungs. On her admission I learned that she had suffered from a violent paroxysmal cough for five years, which had been treated by a number of physicians, mostly homœopathic, without any satisfactory results and with the most varied diagnoses. On examination I found an extensive deep injection of the whole pharynx, which was, moreover, so excessively irritable that a laryngoscopic examination was very difficult. Examination of the lungs was wholly negative, as I expected. On questioning her about her functions she stated that she had been long subject to menorrhagia, but she had never had a vaginal examination. On my making one myself, I found a large polypus protruding from the os uteri, on the subsequent removal of which her cough immediately began to improve, so that she soon returned home.

In a second case I was asked to see in consultation a gentleman who, while convalescing from pleurisy, had developed a violent cough, which no medicines, including various expectorants and opiates, seemed to check, and latterly, from want of rest at night and from return of pain, he seemed to be seriously losing ground. As soon as I heard the patient's cough I felt certain that expectorants would scarcely relieve him, because he had very little to expectorate. The whole of the affected side gave large creaking and crackling sounds to auscultation, indicative of tough plastic exudation with intense consecutive pleuritic irritation, with its resultant non-expectorant pleuritic cough. I personally strapped the whole of that side with strips of adhesive plaster from the lower border of the ribs up to the axilla, and then well over the shoulder, to render that side of the thorax as immovable as possible, and directed that all medicines should be stopped. The patient immediately felt great relief, and his cough was so far arrested that he slept well at night, though he had left off the free doses of chloral and of opiates which he had been taking for a number of days.

On the other hand, whenever a secretion collects in the bronchial tubes, so soon as it arrives at certain sensitive parts in the respiratory tract the expectorant cough immediately begins, and what is more, it cannot stop, but must go on in a continued series until it clears that place. There may then be a temporary lull, but the rule is that the secretion soon reaches another of these sensitive tracts, and again a continuous cough comes on, until the final cough area in the rima glottidis is reached, when nothing short of a general convulsion will arrest the cough unless the matter be expelled into the pharynx. It is this necessity for repeated effort to propel the matter onwards that so alters the sound of this coughing from any of the varieties of non-expectorant coughs. The presence of these sensitive areas in the respiratory tract was first shown by the experiments of Budge, who demonstrated their existence in certain parts, but not in the whole of the larynx. Nothnagel extended these to the trachea and bronchi, but it was reserved for Kohts to demonstrate conclusively that the first area from below upwards was at the second division of the bronchi. Below this, as clinical experience with capillary bronchitis and pneumonia will confirm, secretion may fill both the pulmonary alveoli and the finer bronchial tubes without producing any cough. On reaching the second division of the bronchi, however, active coughing commences, to become much more pronounced on reaching the bifurcation of the trachea. All experimenters, Longet, Vulpian, Nothnagel and Kohts, agree that the trachea itself is not as sensitive as the area at the bifurcation, and also that the free border of the vocal cords is quite insensitive, but intense coughing at once sets in on touching the interary-tenoid fosse, while the same occurred on touching the glosso-epiglottic fold and aryteno-epiglottic fold. It is unnecessary to add that in inflammatory states of the respiratory tract this irritability may be both increased in degree and in extent of surface, so that the trachea may become intolerant of secretions along its whole extent; but, at any rate, enough is demonstrated to show that a true expectorant cough cannot cease until it ends with an expectoration, and it matters little whether the expectorated matter be considerable in bulk or very small. This continuous character of an expectorant cough is well illustrated in cases of chronic bronchitis with very viscid expectoration, the catarrh sec of Laennes. The particle of mucus may be only a small globular but sticky mass, and yet, once started on its way, the patient has to devote his whole efforts in a succession of quick, powerful coughs which it is impossible for him to check, until he gets rid at last of a seemingly insignificant quantity for such a great and tumultuous effort. I once knew such a case in an old man who was the terror of some ladies in church, for when he began he soon entered upon a run of rapid little squeaks, which, with his swaying body and blackening face, suggested some fearful catastrophe, until a final sort of hallelujah in his throat told the hearers that the phlegm had arrived.

With these preliminary observations we now pass on to the different varieties of non-expectorant coughs; the first we would mention is due to simple inflammatory irritation without secretion of some portion, or the whole, of the respiratory tract from the epiglottis down to the third division of the bronchi. A typical instance of this is to be found in the purely hyperæmic stage of acute bronchitis when, with a tumefied and dried state of the bronchial mucous membrane, we find the patient much oppressed for breathing and constantly tormented with a frequent short and hacking cough, each act of coughing evidently increasing his sense of soreness and tightness of the chest. The prevailing sound of his cough I need not say is of the non-expectorant variety, while auscultation reveals a number of dry whistling rales often more pronounced on expiration. The indication here is to turn the cough as soon as possible into the expectorant variety by nauseant expectorants which will start secretion. For this purpose I use a grain of tartar emetic dissolved in a teacup of water and direct the patient to take a teaspoonful every ten minutes until he begins to feel a little sick. When he does so the dyspnœa usually vanishes, easy expectoration comes on and the separate husky coughs stop.

A much more common example of this cough, however, occurs in the course of ordinary bronchitis, both acute and chronic, where, owing to the fact of the co-existence of secretion and more or less free expectoration, its presence may be overlooked and it be confounded with the expectorant cough. In these cases the patients have a number of distressing and painful separate hacks without bringing up anything, their cough, however, every now and then terminating in the continuous expectorating kind. In all such cases, though there may be considerable secretion yet it is unequally distributed in patches of viscid coating with inflamed spaces between, and particularly if the dry surfaces are about the bifurcation of the bronchi. We need not say that these cases of mixed expectorant and non-expectorant coughs are especially frequent in the course of phthisis, as we then have ulcerated conditions in the track of decomposed pus expelled from vomicæ or from pouches of dilated bronchi. I am particular, therefore to listen to the patients coughing in order to determine the ratio between the expectorant and non-expectorant sounds, and if there be a considerable number of the latter, to add the sedative neurotics to the cough mixture. Of these I most prefer a small dose of chloral with a small dose of morphia, than a full dose of either separately with the addition of aconite in febrile cases. Eight grains of chloral and one-eighth of a grain of morphia, for an adult, are quite sufficient.

But what we would particularly desire to emphasize at this juncture is, that these neurotics are to be given for the non-expectorant element in the cough, exclusively. So far as expectoration itself is concerned they are drawbacks and not helps. I have seen therefore, much harm from the routine use of neurotics in coughs given apparently because, in some cases they are so markedly beneficial. In the passive bronchorrhœa of the aged with dilated hearts, in chronic bronchitis with bronchiectasis and emphysema, in capillary bronchitis, in pneumonia, and lastly, in all conditions in which there is abundant secretion, they are not only useless, but may be quite mischievous, and, as before remarked, they have no place in a cough mixture unless the sound of the cough betrays much useless irritation, as a complication.

The second variety of useless cough which we would mention is pure inflammatory irritation of the pharynx. This is common enough in ordinary colds and not infrequently the precursor of laryngeo tracheitis by extension. It is, however, one of the most obstinate troubles of advanced phthisis, giving rise to a constant tickling sensation in the throat which has been wrongly ascribed to reflex irritation from ulcerated surfaces lower down. Kohts found that a few separate coughs could be induced by electrical or mechanical irritation of the posterior surfaces of the palate and uvula and also of the pharynx, and that most violent and prolonged paroxysms could be induced by pulling the pharyngeal nerve. These facts explain the use of throat demulcents and for the same distress in phthisis, I have found Sidney Ringer's recommendation to apply a powder of one grain of morphia to five of starch, with a brush, low down in the throat, often enables patients to get a night's rest from the arrest of the prolonged paroxysms of coughs, which otherwise would rarely stop until vomiting changed temporarily the sensation of the throat.

The third variety of useless coughs is from irritation of the pleura. The importance of recognizing a pleuritic origin or element in a cough can scarcely be overrated. I believe that many cases of permanent damage to the lungs, including the induction of phthisis itself, might often be prevented if the frequent origin of a chronic cough in a pleuritic adhesion was more commonly recognized. A valuable monograph might be written indeed on the theme that "Serous Inflammations are always serious," not so much from their immediate effects, though often that is the case, as from the far-reaching consequences on the affected viscera of the glueing together of the two surfaces of their serous coverings. How long, for example, will it be that the brain or spinal cord, will be as good as ever, after a meningitis, however slight? When will the heart be quite free from the effects of a pericarditis? How often do we find the sequelæ of a long antecedent peritonitis manifest themselves in some complication in the abdominal cavity? But post-mortem revelations show us that of all serous inflammations, those which lead to pulmonary adhesions are the most common, often where they had not been at all suspected. Repeatedly, on the other hand, I have found that patients who come with a chronic cough, some with the diagnosis of chronic fibroid phthisis, others as instances of constitutional irritability of the respiratory passages, others again as asthmatics, have proved on examination to be suffering from chronic pleuritic adhesions, and therefore were most benefited by measures directed to that condition. Nothnagel, it is true, failed, he says, to induce cough by irritation of the pleura, but other experimenters, and especially Kohts found the case to be directly the reverse; the latter observer noting it as invariable if the irritation was sufficient to cause inflammation. I am sure, however, that all clinicians will testify to the prolonged tendency to short hacking cough, after a patient has recovered from any attack of severe pleurisy. I myself have never found it absent in any such patients that have been under my observations for a year after their attack. The only exceptions, which in truth are only apparent exceptions, are in cases of hydrothorax with renal disease, for in them the effusion is often too watery to leave adhesions after absorption. These patients are specially prone to have their cough return with changes of the weather, a common source of aggravation of all symptoms due to adhesions of serous membranes, as in pachymeningitis, for example, but, because their cough returns, then they are apt to ascribe it to their catching a fresh cold. My rule, therefore, is to strap the whole affected side for six months or more after every attack of general pleurisy, explaining to the patients the necessity of the procedure to allow of as perfect rest as possible to this unresting respiratory surface, as otherwise the embers of the original inflammation will not go out and a permanent source of pulmonary mischief remain. The immediate relief to the constant sense of uneasiness in the side, and the cessation of the useless ominous hacking cough which accompanies that uneasiness, very soon reconcile the patient to the trouble of wearing the straps. There are, however, many other conditions besides simple pleurisy, where these considerations will apply. Whenever patients come to me with the ordinary signs of phthisis, I ask if they have been troubled with rheumatic pains about the shoulders. The answer is frequently in the affirmative, with often a pain behind the scapula worse in stormy weather. These pains are sure to give rise to useless cough. It is the familiar dry hacking cough of early phthisis. As a means of diagnosis, laying the cold hand on the infra clavicular space over the affected part will immediately elicit several sharp hacks, when the same procedure tried first on the unaffected side will not do so. But a still more decided example of this kind of cough, and with much more injurious effects, is when a vomica has contracted extensive adhesions in front. The patients often then complain of an acute incisive pain through the lung which constantly excites more coughing. Now in both the early stages, and still more, in vomical, this pleuritic cough cannot be otherwise than harmful and provocative of increased inflammation in the surrounding parts. When, therefore, the phthisical process is limited to one lung, I invariably strap that side and keep it so for months together. Some writers on theoretical grounds, object to this procedure. I believe that if they took careful clinical notes of the cases in which strapping is tried, they would come to a very different conclusion.

The fourth variety of useless cough is the spasmodic cough of pertussis. This cough is specific in its kind and not due to bronchitis. It may therefore be wholly suppressed in less than a week as I have done repeatedly, and not return, though the disease remains and runs its natural course, and may remain as infectious as ever without there being any cough present. If, however, the patient contract a cold before the six weeks is over, the whooping cough at once comes back and is then quite intractable to the measures which at first arrested it, showing that the irritation of simple bronchitis plays the same role in inciting the nervous irritability of pertussis that bronchitis does in exciting asthma. My plan for arresting the cough of pertussis is to bring the patient as rapidly as possible fully under the influence of belladonna. Nothing short of doses which will produce the physiological effects of the drug should be tried. In children the dose should be enough to produce flushing of the skin, and repeated every two or three hours, night and day, for a week, after which the intervals of the doses may be gradually lengthened. Five grains of chloral may be added if after the third day the belladonna does not seem to have the full desired effect.

The fifth variety is a tracheo laryngeal cough in children, occurring mostly at night and due to malarial infection. It is quite paroxysmal and strongly suggestive of whooping cough. In one family I had a younger child begin with such pronounced symptoms that I was fearful that it was true croup. The next day, however, three more of the children were down with the same croupy cough and each with considerable fever. The occurrence of so many cases of croupy cough together was a great relief to me, for I soon found my suspicions confirmed as to the nature of the trouble by a sign on which I place a good deal of reliance as diagnostic of a malarial infection in children, namely, the presence of blood corpuscles in the urine under the microscope. Children with these malarial coughs often rise in the morning tired and fretful, with no appetite, with brownish yellow coating of the tongue and considerable pharyngeal redness; but during the day they scarcely cough at all. If a few blood corpuscles are found in the urine, a few doses of quinine, are sufficient to arrest the cough.

The sixth variety is familiar to physicians as the nocturnal cough of children from some irritation in the alimentary canal, such as from indigestion, the presence of worms, etc., and should be treated accordingly.

The seventh variety is that with which we are all familiar and which is often termed the uterine cough. If it be meant by this that it is associated with disorder of the female generative functions or organs it is correct enough, but the starting point of the irritation may not be from the uterus, but rather from some of its accessories. This cough is often the loudest of all coughs, as in some hysterical women. Like other accompaniments of hysteria, I have succeeded best in its treatment with purgatives like cascara, alœs and rhubarb, with intestinal antiseptics like benzoate of soda, salol and camphor, with the usual adjuvants of myrrh, assafœtida and valerian, and the bromides. On the other hand in women more advanced in life we may find a local cause in the cervix uteri, the removal of which may be all that is necessary. The cough of chlorotics which so often excites alarm as likely to be from phthisis, is doubtless of the same general character.

Very different of course is the next variety, namely the aneurismal cough. The diagnosis may be facilitated by listening carefully over the trachea to the persistent croupy sound of the breathing, no matter how quiet the respiration be. I have suspected aneurism in a case of laryngeal phthisis, by this sign, where the co-existence of pronounced laryngeal ulceration made the case otherwise very obscure, and the autopsy proved the correctness of the surmise. This cough is best relieved by morphia, but it is surprising how often its most distressing paroxysms can be warded off by a couple of leeches to the notch of the sternum.

Similar in its genesis but of widely different import, is the cough produced by enlarged bronchial glands pressing upon the pneumogastric. This may be one of the earliest signs of phthisis, but if so it wholly differs in its nature and associations from the early pleuritic cough. It is almost invariably accompanied by excessive sensitiveness of the pharynx. Very often this goes along with hoarseness or even aphonia and intractable vomiting, although there be no vomica or scarcely any pulmonary symptom present. At other times there is a good deal of palpitation of the heart. In these cases the normal bronchial breathing between the scapulæ is much intensified. You can promise the patients that their hoarseness and vomiting, will both cease after a while, which it usually does with softening of the implicated glands, but all the symptoms, including the cough, can meanwhile be greatly relieved by repeated dry cupping between the shoulders. I have wondered whether some of the good results reported from the old practice of a seton between the shoulders in the treatment of consumption may not have happened in cases of this kind. Of course this kind of vomiting with hoarseness in phthisis is wholly different from the same symptoms later on.

Another example of purely reflex coughs is mentioned in all our text-books on diseases of the ear. Foreign bodies in the external auditory canal are especially prone to occasion it, and if we cannot find the reason for paroxysm of apparently causeless coughing, we had better look for plugs of hardened wax as a possible explanation.

Finally we have the coughs of mitral insufficiency and of cardiac dilatation, which are too familiar for us to detain the society with. Also the cough from irritation of the phrenic nerve in perihepatitis, and even in abscess of the liver, as well as in some cases of splenitis, each of which is to be recognized by its sound as having nothing to do with expectoration of matter from the lungs, each also requiring its own and not a routine treatment. There remains one cough however which is always of grave import; namely, the cerebral cough. In a few cases of epilepsy it may indicate nothing but a functional irritation, but when associated with symptoms of cerebral mischief it points to organic changes of irritative lesions affecting the cough center in the medulla oblongata. This is apparently located in the rhomboid groove on both sides of the raphe, just above the calamus scriptorious, and is particularly apt to be excited by affections of the under surface of the cerebellum, or by effusion, abscesses or tumors pressing the cerebellum down upon the medulla.

I have spent so much time in referring to these various kinds of simply irritative coughs, because they are all of a wholly different nature from the cough which is due to the presence of some material that is not in its proper place when it is in one of our air tubes. Where that material is a foreign body, no matter how small, it must leave. But just the same way, if it be a secretion of fluid in an air tube; the tube is not for fluid and it must leave also. Hence a continuous imperative coughing in which each act reinforces the preceding, is set up until the clearing out is accomplished. The indications therefore for the treatment of expectorant coughs are simple and there are only two. First to make the phlegm so liquid that it will flow easily, and secondly to make the coughing powerful enough to be effective. We may add a third, which, however, is not so much concerned with the act of expectoration itself, namely, to check or diminish the amount of superabundant secretion. The last indication occurs specially in the passive bronchorrhœa of old persons, in cardiac weakness and in most cases of chronic bronchitis with emphysema. For many such cases of chronic bronchitis therefore, I have found no treatment better than with the Tr. Ferri. Mur. to tone the heart and weakened bronchial muscles, because iron—the oxygen bearers, particular remedical effect lies in its increasing muscular power. Along with this action we may seek the adjuvants Tr. Nucis Vomicæ, Digitalis, Citrate of Caffeine and Sweet Spirits of Nitre. In other cases, as in phthisis with profuse bronchial discharge, the dilute nitric acid is indicated to check secretion, and at times I have had in these, very good effect from three grain doses of zinc oxide.

There is one condition however in which expectorant power is often imperatively needed, and that is in the capillary bronchitis or pneumonia of young children or infants. Here we may have recourse to one of those physiological associations in the actions of contiguous organs, which it seems to me ought to be more frequently noticed in our text books than I find to be the case. Thus reasoning upon the fact that we can hardly have a movement of the bowels without a simultaneous emptying of the bladder, and moreover that the act of defecation itself seems to excite a freer flow from the kidneys, as shown by one or more attempts to pass a little more water after the bladder had been previously emptied along with a movement of the bowels. I have had repeated large enemas of warm water given in the treatment of the suppression of scarlatinal nephritis for their physiological diuretic effect, and not, as some say, to have them act as internal warm water fomentations to the inflamed kidneys. But an equally close association exists between the œsophagus and the respiratory tract. Dr. Kroennecker has shown that each act of swallowing produces a distinct stimulent effect upon the heart, as well as upon the mechanism of expiration, and hence in the severe dyspnœa of children's pneumonia, I have kept for prolonged periods the little patients swallowing half teaspoon doses of hot milk and lime water with the best results in aiding their failng power of expectoration. On the same principle I recommend the sipping of a cup of hot coffee for phthisical patients before they rise in the morning, to facilitate their fits of morning expectoration.

There remain therefore for us to consider now the treatment of true expectorant coughs according to the indication often presented, namely, to render the bronchial secretion less viscid and most easy of expulsion. Prior to the year 1875, I relied on the drugs ordinarily recommended in our works on the materia medica, and used mixtures of ipecacuanha, squills, senega, chloride of ammonium, chloride of potash, or balsamic mixtures with opium, etc. Although I had my share of successes with these agents, yet I was constantly meeting with cases of cough, especially chronic ones, which did not progress to my liking at all. An instance of this sort induced me to try a new departure. A lady æt. 45 years consulted me about a chronic bronchitis of many years standing which in a few weeks after winter set in would become complicated with distressing asthma Expectoration was very profuse and very viscid. She would then be confined to her room the whole of the winter and spring months, and often be unable to rise from her chair without inducing a paroxysm of asthma.

Orthorpnœa was constant during the night, and ere long after I had begun treatment, her urine became scanty and general anasarca set in. One of the features of this case also was a persistent sore throat, mainly due to a posterior pharyngitis which often caused aphonia and, from the irritability of the parts, vomiting during her fits of coughing.

Having for some time interested myself in the observation of the action of oils when administered internally on mucous secretions, I came to the conclusion that all oils that are taken up in any quantity from the intestine, whatever their other properties might be, would pretty surely produce a watery flow into the bronchial tract, especially if directed to that mucous surface by a local hyperæmia. I had already found by experience as I thought, that a castor oil purgative on that account acted badly in infants with bronchitis by increasing the flow into the bronchi of mere watery secretion and thus intensifying the natural difficulty of expectoration in these little patients. On the other hand it struck me that as much of the benefits of the domestic remedy of flaxseed infusion in acute bronchitis might be due to the oil of the seeds, the linseed oil itself might answer the indication I had in view in this patient, if a proper emulsion of it could be made. I found however, at first a considerable difficulty in making a stable emulsion at all of this oil, still more a palatable one, but after repeated trials I succeeded in getting one made which is quite equal to any of the cod liver oil emulsions in the market, and an improved formula for which I herewith append. On administering it to my patient the beneficial effect was ere long very noticeable. In the course of a week the expectoration became much easier and in less than a fortnight the asthmatic attacks and the pharyngeal injection and irritability were markedly lessened. The treatment with the oil was steadily persevered in with such continuous improvement that she was able to resume her domestic duties some two months in advance of her usual date of improvement, but what is more to the purpose, she has remained ever since almost wholly free from her old disease, as she is soon able to prevent its development whenever the symptoms manifest themselves, by an immediate recourse to the remedy. Since 1875, the emulsion of linseed oil has been my constant prescription in ordinary acute bronchitis, almost to the exclusion of other medicines, because I have found none so prompt or efficacious as it is. As I have made a uniform practice for many years to keep notes of all the cases of my private practice, I can speak quite definitely on the subject and support my statements not by memory, but by record. It is because I feel that we have in this oil a most efficient remedy for expectorant coughs that I would urge it upon the attention of the profession, especially as I have been unable to find any reference to its use as an expectorant in either of our National Dispensatories, Wood's or Stillé's, or in the American works of Beck, Biddle, H. Wood or Bartholow, in the British works of Pareira, Phillips, Royle, Ringer, or Brunton, or in the German works of Binz and of Nothnagle and Rossbach.

In order to allay the element of nervous irritability caused by the inflammatory condition of the bronchial mucous membrane, I commonly add to each tablespoon of the emulsion six to eight grains of chloral and from 1-10 to 1-8 of a grain of morphia; but I need not say that the benefits of the mixture can scarcely be largely due to this addition, for such small doses of these neurotics would soon show their inefficiency if administered singly, while they would have no effect whatever on the quality of the sputa. Not only however, do I rely on this emulsion in acute bronchitis, but still more in the most chronic forms of the disease when the expectoration is viscid and adhesive. As a prophylactic against emphysema I regard it as invaluable, and I deem it not impossible that it may serve as a direct nutrient of the pul monary tissue for I have often noticed after its prolonged administration over many months, a decided improvement in expiratory power on the part of patients who seemed at first to have considerable overdistension of the lungs. It is as well a remedy of decided value in the treatment of bronchitis, in distinction from peptic, asthma, as well as in asthmas which have a history of sequence to pertussis or measles.

Another frequent indication for its administration is in the treatment of phthisis in patients who cannot take cod liver oil, particularly in those who have much bronchitis. Of course it can hardly claim to possess the nutrient properties of cod liver oil, but as a substitute for it where such has to be found, I find it much superior to cream or other proposed substitutes. In many cases also that can take cod liver oil, but in whom the cough is very racking, I administer it temporarily until the cough is relieved by a change in the character of the expectoration, and I may say that there are but few who after a few days trial find themselves unable to continue it, for in my experience, in comparison with cod liver oil it is much easier borne by the stomach.

The cases in which I have found the linseed oil emulsion useless have been causes of capillary bronchitis or broncho phenomonia, as might be expected. Also cases of bronchitis occurring during epidemic influenzas, in which we have profuse nasal catarrhs alternate with bronchitis. Here the constitutional symptoms indicate an infectious origin of the trouble and such coughs generally have to run their course. The same may be said of intercurrent bronchitis in fevers, as those depend often on pure muscular weakness of the bronchial walls combined with cardiac failure from the fever. Also in secondary bronchitis of heart disease, as well as in toxic bronchitis from gout, Bright's disease, etc., and evidently in all cases of bronchorrhæa whether senile or from bronchial palsy in fibroid degeneration of the lungs. But as remarked above, when the bronchitis is primary and local in its etiology, the indication for its use comes up as soon we have a cough which would at once improve if only we could change the secretion from the tough, glutinous, clear, albuminous coating which lines the tubes in acute bronchitis, or the small, adhesive yellowish pellicle which causes such severe coughing in chronic bronchial catarrh, to the secretion which the patients themselves well describe as loose and easy.

The formula for the emulsion which I now use is:

℞.

Ol Lini,	℥xv
Ol Gaultheriae,	
Ol Cinnamoni,	aaʒii
Chondrus (Irish moss),	℥ss
Aquæ,	ʒxxiv
Glycerini,	ʒv
Syr. Simplicis,	℥x
Ac. Hydrocyanici Dil	ʒiiss

Of this emulsion my usual prescription for acute bronchitis is:

℞.

Mist. Ol Lini,	oz. vi
Chloral,	dr. iss
Morphinæ Sulp,	gr. iss

M. S.—Tablespoonful an hour after meals, and if the coughing is severe at night, a fourth dose at bed-time.—*New England Medical Monthly.*

THE ACTION AND USE OF ALCOHOL IN FEVERS.

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The use of alcohol in fevers has become almost universal. Yet, while the profession is of one accord as to its utility, its usefulness has been accepted rather as a matter of clinical evidence than as a result of precise information regarding its action. As a result of this lack of precise information regarding its action it has happened that the laws governing the therapeutics of alcohol in fevers have been less understood, and the method of its administration has been the subject of more contention than that of any other substance in the materia medica.

Two opinions have been held which are diametrically opposed. One is that alcohol acts merely as a stimulant, which spurs on the lagging energies, enabling the vital powers to struggle a little longer in the hope that the patient may outlive the disease and reach a place of safety. Its devotees teach that alcohol is the lash and that it should not be employed until the vital powers begin to lag; when the heart begins to fail, the lash should be applied and the heart, as it were, whipped into greater activity.

The other opinion holds that alcohol in fevers is a food in the fact that it supplies to the economy the materials for the production of heat and force, and in so far as it does so, saves the tissues of the body from destruction, and that its administration should be governed by the laws governing the administration of other foods of equal value.

The question then resolves itself into whether alcohol is a stimulant or a food, and on a proper understanding of its action will depend its therapeutic application. In order to understand the action of alcohol in fevers, it is necessary to have a proper appreciation of the phenomena of fever; what are the essential changes within the economy which are associated with it; to what is the fever due?

The pathology of fever is yet but imperfectly understood, and there is much that is obscure, much that requires careful investigation before the phenomena of fever can be fully and satisfactorily explained. It will suffice, however, for our purpose if we confine our attention chiefly to the phenomenon to which fever owes its principal characteristic, and which itself is usually synonymous with fever, namely, the abnormal elevation of temperature.

The source of the body heat is a process of oxidation within the tissues of the body, and this heat is so regulated that the body in health is maintained at a nearly uniform temperature. In this heat regulating mechanism there are two processes to be observed, namely, a heat-producing or oxidizing process and a heat-dispersing process.

The first process is the one with which we are most concerned, and will receive our closest consideration. All the work done by the body and within the body is the result of the liberation of energy by the oxidation of the tissues concerned. This liberated energy is manifested in two forms as force and heat. These two manifestations of the same force are usually co-existent, but, as will be shown later on, there is good reason for believing that heat may be liberated without the manifestation of force.

The most active tissues are the muscles and glands, and they are the chief sources of heat, although it is probable that all the tissues of the body, according to their metabolic activity, add their quota to the maintenance of the body heat. In the hepatic vein it has been shown that the temperature of the blood is higher than in any other part of the body, and we can readily judge from the size and activity of the liver that it should be so. Likewise the blood flowing from a muscle is warmer than the blood flowing to it, and the greater the activity of the muscle the more heat there is generated and the warmer the blood.

If the source of heat, however, was dependent exclusively upon the activity of the tissues, it would be evident that at times, as during sleep, the production of heat would be insufficient to maintain the temperature, for during this period muscular and glandular activity is reduced to a minimum. Or if we take such an illustration as the hibernating animals, it is evident their prolonged sleep would result in such a reduction of temperature that life would be incompatible. Yet we know that in these cases the reduction in temperature is so slight that we are at once led to the conclusion that while attaching due importance to the activity of the tissues as a source of heat, there must be some other source of heat independent of this. And it is also evident that this source of heat is under the control of some centre which may be called a heat centre, and that this centre has the power of liberating heat in proportion to the demands of the economy. Thus during muscular and glandular activity this heat centre must inhibit the production of the heat-producing process it controls, and during glandular and muscular quiescence it must accelerate or increase the production of heat in order to maintain a uniform temperature. The action of this heat centre may be analogous to the action of the respiratory centre in the medulla, in that it may be affected by the temperature of the blood passing through it in a similar manner to the action on the respiratory centre of the amount of oxygen in the blood passing through it.

The manner in which this heat centre can cause the production of heat at will is difficult to understand, but perhaps some light may be thrown on the subject by the consideration of the phenomena of the production of heat during muscular contraction.

A muscular contraction under normal circumstances is caused by the passage from a nerve centre of a stimulus which sets up a molecular change in the muscle cells by which the oxygen elements combine with the carbon and hydrogen of the cells, forming carbonic acid and water, and as a result of this combination, force is liberated which is manifested by muscular contraction and heat.

The point to be remembered here is that the oxygen, before combustion, existed in organic combination with the other elements of the cell, and the process of oxidation is not a sudden union of the oxygen of the blood with the carbon and hydrogen of the cell. It has been shown that a muscle can be made to contract for some time after removal from the body, even if placed in an atmosphere of nitrogen: therefore, the oxidation which gave rise to the liberation of energy must have been produced by the decomposition of products already formed within the muscle, and previous to its removal from the body. This sudden transference of potential into kinetic energy by a nerve stimulus bears a close analogy to the sudden tranference of the potential energy of gunpowder into kinetic energy by the application of a spark.

Having seen the action of a nerve stimulus in liberating energy by the sudden combustion of some of the products formed in the tissues, it is but going a step further to suppose that the nervous system has also the power to cause at will a slow or silent oxidation of these same products by which carbonic acid and water are formed and heat is liberated. And granted that this oxidation is controlled by the heat centre, it can be readily seen how a uniform temperature may be maintained by variations in the rapidity of this oxidation.

It may be said in answer to this theory that it is intruding too far in the domain of speculation, yet does it seem any more preposterous to suppose that the nervous system has the power to cause certain elements of the cells to unite in a chemical combination, than to suppose that the nervous system has the power to control the nutrition of the cells; that it has the power to cause the cells to assimilate certain molecules of food in a definite manner. And yet this power of the nervous system to govern the nutrition of the cells is now no longer doubted; and if it has the power to build up the tissues why should it not have the power to break them down?

Before proceeding further, it may be advisable to speak briefly of the mechanism which controls the dispersion of the heat. Aside from the heat lost by the warming of the expired air, the urinary secretions and the excreta, the chief agent in the dispersion of the heat is the skin—and here there is a regulating mechanism which deserves mention. When, as during severe muscular exertion, there is an excessive amount of heat produced within the body, the cutaneous arterioles become dilated, thus exposing a greater quantity of blood to the cold surface, and at the same time heat is abstracted from the body by the evaporation of the perspiration, which is at this time profuse. When the production of heat within the body is scant, the loss of heat from the surface is reduced to a minimum by the contraction of the cutaneous arterioles and the diminution of the perspiration.

The vaso-motor nerves control the dilatation and contraction of the arterioles, while a different set of nerves control the activity of the sweat glands; for dilated cutaneous arterioles may coexist with a dry skin, as in scarlatina, and in certain other febrile conditions where the skin becomes hot and dry (mordicant); and conversely, a cold skin with contracted cutaneous arterioles may coexist with a profuse perspiration, as in the night-sweats of phthisis, in severe pain, or in the death throes. It will thus be seen how the phenomena of heat dispersion, like the phenomena of heat production, are dependent on the nervous system.

Recurring to the abnormal elevation of temperature in fever we find that it must be due to the following causes: either an increased heat production, or diminished heat dispersion, or to both these causes combined.

A little consideration will readily show that diminished heat dispersion is not an essential factor in the production of fever, for an abnormal elevation of temperature may co-exist with an increased heat dispersion, as may be witnessed in the high fever and profuse perspiration of acute rheumatism or septicæmia.

We have thus narrowed the essential cause of fever to an increased heat production, and that this heat production is under the control of the nervous system or that part of it which constitutes the heat centre.

Viewed from this light, fever may be defined as a phenomenon manifested by increased elevation of temperature due to derangement of function of the heat centre, by which there is an increased oxidation of the tissues.

To what may this derangement of function of the heat centre be due? We can say with increasing confidence that it is due, in the case of the continued fevers at least, to the presence in the blood of micro-organisms, or to the products of their manufacture. In the non-continued fevers it may be due to the presence of morbid products in the blood, such as may be derived from wounded surfaces or the ingestion of poisonous materials from the alimentary tract.

The result of the increased oxidation of the tissues in fever is that there is an increase in the production and elimination of carbonic acid and urea, with an increase in the production and diminution in the elimination of water. The water, for some reason yet obscure, is retained within the system, thus contrasting strikingly with the condition in health, when an increase in the production of water, as in severe muscular exertion, is counterbalanced by an increased elimination of water by the skin, which also serves the purpose of removing at the same time the excessive production of heat by evaporation.

The oxidation which produces heat occurs, not within the blood, but within the tissues. The oxygen first combines in a loose organic combination with the other elements of the tissues, and in the process of oxidation the carbon and hydrogen elements most readily unite with the oxygen, forming carbonic acid and water. A certain amount of the nitrogenous tissues become oxidized, forming urea or its antecedents, leucin and tyrosine; but the urea represents rather the wear and tear of the tissues than the amount of oxidation going on, as the weight of evidence goes to show that the amount of urea eliminated is not proportional to the activity of the tissues.

In health the tissues remove from the circulating blood sufficient oxidizable material to replace the material that has undergone oxidation, so that there is a constant metabolic activity, a constant oxidation going on for the purpose of liberating energy, resulting in the destruction of certain elements of the tissues, and a constant rebuilding for the purpose of renewing the elements destroyed. In fever, however, the equilibrium between the destruction and renewal of tissue elements is not maintained, for two reasons: first, there is an increased demand for the oxidation of the tissues; and second, there is a decreased supply of oxidizable materials for the regeneration of the tissues on account of the faulty assimilation of food which is so characteristic of febrile conditions.

As a result of the inability of the oxidizable materials circulating in the blood to meet the demand for oxidation, the reserve stores of oxidizable materials, namely, the adipose tissue, is called into requisition to make up the discrepancy between the supply and demand; hence the rapid disappearance of the adipose tissues in fevers and in starvation.

The nitrogenous tissues also suffer, but being less easily oxidized than the adipose tissues, they suffer to a less extent; yet the increased oxidation they undergo is sufficient to give rise to a marked increase in the production of urea, and the tissues at the same time undergo parenchymatous or granular degeneration.

From the foregoing it is evident that if the administration of alcohol in fevers acts as a food by supplying to the economy a readily oxidizable material, that in so far as it does so it saves the tissues of the body from destruction by lessening the call upon them for the materials for oxidation, which will be indicated by a less rapid waste of the adipose tissues, less rapid destruction of the nitrogenous tissues, and as a result of the latter a diminution in the production of urea. Also, as a result of the increased oxidation within the tissues in fevers, more alcohol would be oxidized than in health, and conversely less alcohol would be eliminated by the lungs and kidneys.

If however, alcohol acted merely as a stimulant in fevers by enabling the tissues to more readily call upon their own resources, it follows that there would be an increased destruction of the adipose and nitrogenous tissues, and an increased production of urea, while the oxidation of the alcohol should not be increased nor its elimination diminished.

In diabetes there is a condition somewhat analogous to fever. In this disease the carbohydrate constituents of the food which is the great source of heat circulate in the blood in a condition apparently unfit for assimilation by the tissues. The tissues do not receive sufficient oxidizable material to maintain the equilibrium between destruction and regeneration, and as a result there is an increased destruction of the adipose and nitrogenous tissues causing an increased elimination of urea. From insufficient oxidation the temperature becomes subnormal and there is great muscular weakness and rapid wasting of the tissues.

From theoretical deductions it would seem that if alcohol is a food its administration in this disease by supplying the tissues with oxidizable material would replace the saccharine constituents of the food, and at least assist in maintaining the equilibrium between destruction and regeneration of the tissues, and thus by its oxidation diminish tissue waste, restore energy to the muscles and raise the temperature to nearer the normal. I do not know whether any experiments have been made in this disease to test the action of alcohol on tissue waste, muscular energy and temperature. In order to ascertain the action of alcohol in fevers, I made the following experiments on patients in the wards of Mercy Hospital, where they could be kept under constant observation and sources of error eliminated as far as possible.

Four male patients were selected for observation; two of the patients were comparatively healthy, having no febrile disturbance. The other two patients were passing through an uncomplicated attack of typhoid fever. These four patients were placed under like circumstances. All were kept in bed while under observation; their diet consisted of milk and beef tea. Each patient was kept under observation for four days; for the first two days no alcohol was administered in any case; for the succeeding two days each patient received an ounce of whiskey every two hours. No antipyretic remedies were administered at any time. A quantitative examination was made of the amount of urea passed by each patient during the two periods when alcohol was not administered and when alcohol was administered with the following results:

AMOUNT OF UREA PASSED.

	Patients without fever.		Patients with fever.	
	Patient No. 1.	Patient No. 2.	Patient No. 3.	Patient No. 4.
48 hours without alcohol - -	974 grs.	753 grs.	1512 grs.	854 grs.
48 hours with alcohol - -	841 "	742 "	1181 "	618 "
Difference - - - - -	133 grs.	11 grs.	331 grs.	236 grs.

It will be seen by this table that in each case the patients eliminated less urea when alcohol was administered than when no alcohol was administered. It will also be seen that the difference between the elimination of urea under the use of alcohol and without it was greater in the fever patients than in the patients who had no fever. This would indicate that while alcohol diminishes the destruction of the tissues, it has a more potent tissue-saving action in the febrile than in the non-febrile state, which agrees with the theoretical deductions already made.

While these experiments considered by themselves are too limited to be of much value, or to be considered conclusive, yet there is now so much accumulated clinical and experimental evidence bearing out the accuracy of their results that the following statements as to the action of alcohol in fevers may be fairly made with almost an absolute certainty of their accuracy.

That alcohol in fevers acts as a food, uniting with the tissues, undergoing oxidation, giving out heat and force, and that in so far as it does so it saves the tissues of the body from destructive oxidation.

That alcohol holds pre-eminence as a food in fevers, because it does not require predigestion, is rapidly assimilated, readily undergoes oxidation, and thus becomes especially valuable where a quick effect is desired, such as to counteract collapse.

Having studied the action of alcohol in fevers, there remains for consideration the proper method of administering alcohol in fevers, which method is directly dependent on the opinion entertained as to the action of alcohol.

Holding the opinion that alcohol is a food, there are two broad laws which should govern its administration in the continued fevers:

First.—Alcohol should be administered from the beginning to the end of the febrile process.

Second.—As much alcohol should be administered as can be oxidized within the tissues.

The ideal treatment of fever would consist of the administration of remedies which would check the two rapid oxidation going on within the tissues, and the administration of food in a form easily assimilated and readily oxidized. How far the administration of the antipyretic agents now in use would carry out the first part of this treatment is not a subject for discussion here, but with the second part we are concerned, for here alcohol is the ideal agent, because it is both easily assimilated and readily oxidized. It is not to be understood, however, that alcohol should be used to the exclusion of other agents. Alcohol, while supplying heat and force, will not build up the tissues; it diminishes the destruction of the tissues but will not repair the tissues necessarily destroyed. Hence the importance of the administration of other foods in order that so far as possible the tissue waste may be repaired.

In the treatment of fever, the physician who most successfully combats asthenia will have the most successful results. And in order to combat asthenia successfully, the administration of alcohol should be begun at the very earliest opportunity and maintained continuously throughout the duration of the fever, remembering that every ounce of alcohol oxidized within the body represents so much force and heat imported to run the human machine, and so much less destruction of the tissue of the body. For the same reason, as much alcohol should be administered as can be oxidized in the tissues. Any increase in the amount of alcohol administered above this point is injurious. Not being oxidized, it is eliminated unchanged: but previous to its elimination it serves but to intoxicate. Alcohol is eliminated by the lungs and kidneys. Its detection in the urine is difficult and clinically impracticable; but it can easily be detected by its odor on the expired air, and when thus detected it indicates that more alcohol has been administered than the system can oxidize, and that its administration should be lessened to just within this point.

The amount of alcohol that can be administered in fevers without its detection on the breath, or the production of intoxication, is sometimes surprising; but in all cases it may be laid down as a safe rule that alcohol may be administered beneficially so long as it cannot be detected on the breath of the patient.

In the wards of Mercy Hospital, where a large number of typhoid fever patients are treated annually, the early and constant administration of alcohol is assiduously followed, and, in conjunction with the administration of milk and beef tea, constitutes the routine treatment of typhoid fever. Under this treatment emaciation is seldom excessive, and death from asthenia is rare. During the past two years 292 typhoid fever patients were treated in this hospital; of these 20 died, giving a mortality of 7.08 per cent. Four of these deaths occurred within forty-eight hours of admission to the hospital. If these cases be excluded, the mortality would be reduced to 5.55 per cent.

ORIGINAL ABSTRACTS.

By KIRKLAND RUFFIN, M.D., Norfolk, Va.

OFFICIAL REPORT ON DIARRHŒA.

After eight years' work, Dr. Edward Ballard issues this report because there has recently been some impatience to learn the results of the investigation, but he takes care to emphasize its provisional character. Dr. Ballard points out that the causes of infant diarrhœa mortality are multifarious. The influence of the atmospheric temperature is very great, but is exerted indirectly. The temperature of the earth is a far more important condition; it appearing that the summer rise of diarrhœa mortality does not commence until the mean temperature recorded by an earth thermometer at a depth of four feet from the surface of the earth has attained somewhere about 56° F., no matter what may have been the temperature previously attained by the atmosphere, or recorded by a thermometer at a depth of only one foot from the surface. Rainfall also exerts an influence on diarrhœa, but apparently only indirectly by preventing the rise or hastening the fall of the temperature of the earth. Wind and comparative calm also affect the mortality. Other things being equal, calm in the diarrhœal season promotes it, and high winds tend to lessen it. Elevation above the sea-level is only a minor influence, but the influence of the soil is a decided one. When the dwelling houses of a place have as their foundation solid rock, with little or no superincumbent loose material, the diarrhœal mortality is, notwithstanding many other unfavorable conditions and surroundings, low, and indeed may be almost altogether unnoticeable. On the other hand, a loose soil, permeable more or less freely by water and by air, is a soil on which diarrhœal mortality is apt to be high. The pressure of much organic matter in any soil renders it distinctly more favorable to high diarrhœal mortality than it otherwise would be, whilst excessive wetness and complete dryness of soil appear to be both unfavorable to diarrhœa. Density of population, density of buildings upon area, restricted circulation of air about and within dwellings, domestic darkness and pueral dirtiness of dwellings, sewer or cesspool emanations, filthy accumulations, polluted drinking water, all exert a baneful influence. Dr. Ballard thus summarizes provisionally the results of his investigation: "That the essential cause of diarrhœa resides ordinarily in the superficial layers of the earth. When it is intimately associated with the life processes of some micro-organisms not yet detected, captured, or isolated; that the vital manifestations of such organism are dependent, among other things, perhaps principally, upon conditions of season and on the presence of dead organic matter which is its pabulum; that, on occasion, such micro-organism is capable of getting abroad from its primary habitat, the earth, and having become air-borne, obtains opportunity for fostering on non-living organic material, and of using such organic material both as a nidus and as a pabulum in undergoing various phases of its life history; that in food inside of as well as outside of the human body, such micro-organism finds especially at certain seasons, nidus and pabulum convenient for its development, multiplication, or evolution; that from food, as also from the contained organic matter of particular soils such micro-organism can manufacture, by the chemical changes wrought therein through certain of its life processes, a substance which is a virulent chemical poison; and that this chemical substance is, in the human body, the material cause of epidemic diarrhœa. It will be observed that this provisional hypothesis is sufficiently elastic to include, as a common cause of diarrhœa, chemical products of bacterial life manufactured indifferently within or outside of the human body. Elasticity, to this extent, of a provisional hypothesis has been necessary for the reason that, in the present state of our knowledge, certain cases and groups of cases of diarrhœa, not distinguishable from epidemic summer diarrhœa, have now and again been found to possess the faculty of being directly communicable from person to person."

Dr. Ballard made some practical suggestions to sanitary authorities, the aim being to prevent the fouling of the soil with matters out of which the material of diarrhœa can be produced, to secure domestic cleanliness, dryness and cleanliness of the soil, lowering of ground water, prevention of rise of ground air, the free movement of air, protection of food from infection, due regulation of sewers, etc.

In studying the pathology of diarrhœa, Dr. Klein has been associated in the investigation, and some very important observations have been made. In the bodies of infants dead of diarrhœa there were marked pathological changes, not only in the intestines, but in all the viscera; and not alone in the viscera of protracted cases, but in those of infants the total duration of whose illness had not exceeded twelve or fourteen hours. For the most part the intestines were empty or only contained a little yellow fæcal matter, or a little opalescent, mucoid fluid, or the surface was covered with some thick, creamy, catarrhal exudation. The amount of obvious hyperæmia of the mucous membrane of the stomach and intestines varied; sometimes there was observed some follicular ulcerations, both in the small and large intestines. Generally there was more or less inflammatory thickening of the mucosa; and even in the cases of only a few hours' duration, denudation of the epithelium, both of the stomach and intestines. Now and then ecchymoses were seen, or even a little blood effused into the alimentary canal. The solitary and agminated glands of the small intestine were mostly prominent; the mesenteric glands were enlarged. The spleen was sometimes congested, or exhibited hyaline degeneration of the arteries or swelling of the malpighian corpuscles with degeneration of the central portion of them. The condition of the liver varied. It was either congested, or pale and bloodless—the former condition prevailing in the cases of short, and the latter in those of long duration; but in every case examined there was one invariable condition, namely: fatty degeneration of the liver cells—slight in cases of short (only a few hours' duration), but pronounced and extensive or complete in all parts of the organ when the illness had been protracted. The kidneys, even when normal to the naked eye, were invariably found to be diseased when examined microscopically, showing inflammatory and degenerative changes, intense glomeruli and parenchymatous nephritis being demonstrated even in cases of very short duration. The lungs, although they might be in parts collapsed, presented marked evidence of acute catarrhal or catarrhal and interstitial pneumonia. The blood may be inspissated and coagulated imperfectly. There was nothing in the microscopical examinations to indicate that the malady was due to any micro-organism developing within the alimentary canal or permeating any of the tissues; but it must not be therefore inferred that a specific micro-organism may not in some instances be present or even undergo development and growth within the body.—From the *British Medical Journal.*

THE COMPARATIVE RESULTS OF LITHOTOMY, LITHOLOPAXY AND LITHOTRITY IN ONE HUNDRED OPERATIONS FOR STONE. By Edmund Andrews, M.D., LL.D.

The author says that at first the new operation of litholopaxy, where it is often necessary to work with instruments in the bladder for an hour or more, impressed surgeons as severe and perilous. But experience soon showed that the bladder was more tolerant of this prolonged operation if all the rough fragments of the stones were removed, than of either the cutting operation or the old method of lithotrity of Sir Henry Thompson or Civiale. The following is a summary of his cases:

Total number of cases of lithotomy, 55; deaths, 7; mortality, 13 per cent. Lithotomy below age of puberty—cases, 26; deaths, 2; mortality, 8 per cent. Lithotomy above age of puberty—cases, 29; deaths, 5; mortality, 17 per cent. Lithotrity after manner of Sir Henry Thompson—cases, 6; deaths, 1; mortality, 17 per cent. Litholopaxy after Bigelow's method—cases, 40; deaths, 1; mortality, 2.5 per cent.

This marked decrease in mortality obtained by Bigelow's method seems to him to be proof enough that it should nearly always be preferred, though he gives the following exceptions:

1. All children whose urethras are too small to admit small-sized lithotrites.
2. All cases where the stone is too large to be grasped by the instrument.
3. In a few cases mulberry calculi are so hard that they cannot be crushed without breaking the instrument.
4. Deformities of the bladder sometimes render it impossible to seize the stone.
5. Strictures of the urethra forbid litholopaxy unless they are first overcome.

These various obstacles are rarely insuperable in the adult, so that out of forty-two proposed litholopaxies, only two had to be changed to lithotomy.

Although such a great admirer of Bigelow's method, yet he has one objection to make. He objects to the evacuation of the fragments by a to and fro current, because a long row of fragments are left in the tube after the bulb is fully expanded, and when the bulb is again compressed this row of sharp fragments is driven swiftly back into the bladder. He thinks a needless and unnecessary irritation is thus produced.

Instead of Bigelow's evacuation, he used an evacuator made on the principle of the double catheter, and has a constant current of warm, carbolized water drawn from a reservoir forty-two inches above the pubes of the patient by a rubber tube acting as a syphon.—From the *Journal of the American Medical Association.*

RECONSTRUCTION OF THE BLADDER.—At the meeting of the Italian Surgical Society, held at Bologna on April 16th, Drs. Tizzoni and Poggi showed a dog from which they had extirpated the bladder, and afterwards formed a new one from a loop of intestine. The operation had been done in two sittings; in the first the loop of intestine was isolated, together with its mesentery, emptied of fæcal matter, washed out with carbolized water, and tied at both ends, one of which was fixed in front of the arch of the bladder; in the second, which took place a month later, the ureters were detached from the bladder, the latter organ was removed, the lower end of the intestinal segment was cut through and fixed to the neck of the bladder, and the ureter adapted to the new bladder. For a week or so there was incontinence, but gradually the dog acquired control over the organ, so that he could hold his water for an hour.

The dog shown at the meeting passed urine naturally, and showed no sign of incontinence. Drs. Tizzoni and Poggi finally discussed the applicability of this procedure to the human subject.—*British Medical Journal.*

AT the meeting of the Pathological Society of London, held May 7, 1889, the president, Dr. W. H. Dickinson, presented a kidney belonging to a member of a family in which albuminuria had been hereditary certainly for four generations, and possibly more.

The history is as follows: The first generation consisted of a brother and four sisters. The brother died suddenly, after a long waiting, "of kidney disease in some shape," æt. 34 years. Of the four sisters, two died at the respective ages of 49 and 48, each having had albuminuria for many years. The brother left six children, two sons and four daughters. Of the six, four had albuminuria. The second son died with it æt. 26 years, having had it since the age of twelve. The eldest daughter died of it æt. 39 years, having had it since sixteen; the second daughter still has it; the third daughter died of it, complicated with diabetes.

All the sisters left children; two of the four transmitted albuminuria.

The third sister left five children, one of whom had albuminuria. The eldest sister left six, five of whom had it, and only the second son escaped. The disorder presented itself in the fourth generation in the only child of the eldest sister, which was born with albuminuria. To these facts were added others which showed the existence of the disease in a collateral line. The portraits of this family, preserved from the time of Edward IV., showed a peculiar pallor, due either to time or disease. The kidneys of the only fatal case, fully examined, were described in detail. They presented the characters of the granular contracted kidney, with general fibrous hypertrophy, universal prevalence of a finely ulcerated interstitial tissue, atrophy of the malpighian bodies, with atrophy of many tubes and dilatation of others, the latter being plugged with large casts.—From the *British Medical Journal.*

CLINICAL RECORDS.

A CASE OF POISONING BY THE OIL OF HEDEOMA (PENNYROYAL).—By U. O. B. Wingate, M. D., Milwaukee.

At about noon, November 20, 1888, I was hastily summoned to see Mrs. ——, who, the messenger stated, was "in a fit."

I found a woman about twenty years of age lying on a lounge and wholly unconscious; pulse small; respiration very quiet; extremities cold; pupils moderately dilated; no froth in the mouth; could not be aroused. A neighbor present stated that the patient had experienced some domestic trouble that morning, and on hearing a noise she came in and found the patient on the floor, where she had apparently fallen from a chair. No one was in the room at the time she fell. This was all the history I was able to obtain, except that the patient was supposed to be about four months advanced in her first pregnancy.

I was at a loss to account for this condition, but suspecting hysterical causes on account of the history of domestic trouble, I applied digital pressure over the supraorbital nerves. In about a minute convulsive movements of the face began, quickly followed by a general tremor over the entire body, resembling a severe chill; then the body gradually and methodically assumed the position of extreme opisthotonos, the patient resting entirely on the occiput and heels. The arms, hands, and fingers became strongly flexed, and the whole body was in a rigid tonic convulsion. In about a minute the muscles relaxed, the relaxation lasting about two minutes, when another convulsion of the same character came on. By this time I had administered gr. 1-4 morphia sulph. and gr. 1-120 atropia sulph. subcutaneously. The patient had no more convulsions, but soon vomited and began to answer questions. She then informed me that at 10 A. M. that morning she had taken a teaspoonful of the oil of pennyroyal and a half-teaspoonful of the fluid ext. ergot at a single dose, with the object of procuring an abortion. She was put to bed, heaters applied, and given as much milk as she could be made to take. She talked incoherently for a few hours, complained of great lameness in the muscles of the neck and back, and also of the flexors of the arms. The next morning was sitting up; had some pain in the back, but no uterine action was provoked. Three months later I saw the patient, and she was well advanced in her pregnancy.

As spoken of in the books, this drug is useful in flatulent colic, and also is much used as a domestic remedy in amenorrhœa. There is also a nostrum manufactured and much advertised as "a cure for all female irregularities," known as "Chrichester's English Pennyroyal Pills." In an extended search I have been unable to find any reports of cases where this drug has been resorted to for criminal purposes, or where its toxic effects have been observed.

It may be of some practical importance to note the fact that toxic symptoms did not appear until about one and a half hours after the drug was taken.

This slow action is also true of other oils of this character, especially of the oil of tansy.

BURNS AND SCALDS.—Delivered at University College Hospital, by Christopher Heath, F. R. C. S., Holme Professor of Clinical Surgery in University College, London.

Gentlemen.—You will remember, that when we went round last Friday week you saw a child who had just been admitted into No. 5 ward with very bad scalds of the body, and I took the opportunity of pointing out to you that the child had really recovered from the first shock of the injury when we saw it two hours after the accident, and was not in the least collapsed. I proceeded at once to dress the case, but you will remember that, notwithstanding all our care, the patient died two or three days afterwards, and we saw the result of the necropsy this day week. That is only one of a number of cases which come into the hospital during the winter from either burns or scalds, and it is therefore convenient to say a few words to you on the treatment of these cases at the present time.

In the first place, what is the difference between a scald and a burn? They are both, of course, the effects of heat; but a burn is the effect of dry heat—flame; and a scald is the effect of moist heat. But if you have liquid metal, like molten lead or iron, you will find that it produces exactly the same effect as a burn; and some of the most terrible accidents that you will see, if you have to do with mining countries, will be in the cases of patients who accidentally get their feet into molten iron, so that they are charred or burned off, when of course secondary amputation has to be performed.

Then with regard to the mode of treatment of a burn. You may, in private practice particularly, see the cases almost immediately after the burn, and you will find that all these patients suffer from shock, usually in a marked degree. The shock is due not merely to the effect of the burn, but to fright. There is nothing more alarming to women than to find their clothes on fire, and the tendency is to rush screaming out into the street, which is the worst possible thing for them to do. If you ever have to deal with such a case, I would recommend you at once to throw the sufferer down and roll her in a thick rug, a great coat, or anything of the kind, which will put out the fire immediately. Having thus stamped it out, you can proceed to treat the burn. Of course in a hospital we do not get cases so soon; they are brought here a little after the burn, and generally still more or less in a state of shock. Now, let me warn you against treating the local injury instead of treating the shock. If you treat the local injury, there is an elaborate dressing, with more or less exposure of the person necessarily; you thus increase the shock, and may, very likely, kill the patient. The proper method is not to treat the local injury at all at first, but to treat the shock by restoring warmth to the body, by wrapping the child in a hot blanket, putting it in front of the fire with hot bottles to its feet, giving a little hot brandy-and-water or something of the kind by the mouth (even an infant will bear a few drops of brandy, particularly while reaction is coming on), and giving a little opium to relieve the pain, for there is no injury more agonizing than a severe burn on the skin, and as long as the pain lasts the shock will be kept up. As soon, therefore, as reaction shows itself, it is wise to give laudanum, and you may give it to children, but you should be cautious about the dose. The usual rule is one drop of tincture of opium for every year of the child's age; but you may give more than that if you are careful in breaking up the doses. What I do in the case of these young children generally is to put five drops of laudanum into an ounce of water, and then tell the sister of the ward to see that they have a a teaspoonful every hour or two according to the circumstances of the case. Repeating these small half-drop doses is much better than giving larger doses, which may produce dangerous narcotism.

But supposing that the patient does not die from the immediate effect of the accident but rallies from it, and you have to treat the case, what are the indications for treatment? They of course vary according to the severity of the injury. And here we come at once to the classical classification, as we may call it, of Dupuytren, usually given in books. I mean those six degrees of severity of burns. That is all very well, but in practice it is quite sufficient to have three divisions. The point for you to determine is this: is it simply a scorch such as you may get from an explosion of gas; or is it something more severe, leading to vesication (which is the condition in which you saw the child the other day, and is the common condition of scalds): or is it something more severe still—a charring which can only occur from the application of dry heat, actually scorching up and burning the part? Those three degrees are practically all that you require. I quite allow that charring may be very different in different cases. You may have a merely superficial burning of the skin, or the muscles may be scorched, and the whole tissues of the limb burnt up and the limb destroyed. Upon those degrees Dupuytren founds three of his divisions, but practically, as I have said, it is quite enough to remember that you may have a superficial burning, or a burning with vesication, or a burning with an eschar, which is the most severe.

First, then, is the superficial burning, as is the case of a foolish person searching for an escape of gas with a light, and getting an explosion of it in the face. There is a good deal of scorching and of course a good deal of pain. Perhaps before you have seen the case it has been powdered over with flour, and that is not at all a bad application. But you may see it before that, and if it has not been powdered there are various things that you may apply. Any greasy application is good, but those things are rather inconvenient on the face, and for face burns I think a very convenient application is a mixture of collodion and castor oil. The castor oil supplies the greasy portion, and the collodion mixes well with it. The proportion is generally one of collodion to two of castor oil, to be painted upon the face. It does not set firmly like ordinary collodion, but it sets sufficiently to hold its place and to protect the skin from the air, which is the great point, and at the same time without any injurious or uncomfortable pressure upon the part. Then, again, nitrate of silver painted upon the burn is very good, only it smarts severely for the moment. The late Mr. Skey was very strong in his advocacy of that, and it is not at all a bad remedy if you apply it in suitable cases. In the case of small superficial burns, a ten-grain solution will make a good application, or you may employ what is to be found in a great many houses (at least used to be)—the nitrate bath of the amateur photographer. Of course, the nitrate turns the part black, and you must prepare the friends for that; but it forms a little superficial eschar all over the burnt surface, and in that way protects it from the air.

Then take a case such as that which we saw last Friday week, where vesication has already been produced. What are these vesications, and what do they contain? It is not merely serum; if it is serum, it has got some fibrinogen in it, for if you leave it the material which is exuded becomes solid, and you may see every now and then in the surgery a patient who has had a scald some days before, and treated it domestically, and who has come here with a mass of coagulated albumen beneath a large bleb of cuticle. Now, it is important not to let that coagulation take place, because it is difficult to treat. The proper plan—the one which you saw me adopt the other day—is to snip the vesicles in a depending position, pat them down, carefully preserving the cuticle on the surface beneath, and then apply carbolic oil. Another very good dressing is the boracic ointment, which has the advantage of being greasy, and is to a certain extent aseptic.

Then we come, lastly, to the case where there are eschars; there we have a burnt surface which is clearly destroyed, and of course time must be given for the slough to come away. Now comes the great point of preserving the patient as far as possible from the risks of pyæmia. No doubt in former times many of these cases of severe burn died in a week or ten days after the injury from pyæmia; that is, they were allowed to lie in a bath of pus of their own formation, and then some deleterious matter contained in it became absorbed, and in that way the patient got pyæmia and died. The great thing is to guard against that by using absorbent dressings, and at the same time dressings which shall be antiseptic as far as possible. Here, again, we may use carbolic oil as a dressing next the surface, and over that plenty of cotton wool—it may be the salicylic wool—in order to absorb the fluid. So also in extensive surface burns it is good to dust a little iodoform upon them, treating them as you would any other surfaces which you want to keep sweet and at the same time to get the fluid absorbed. Where sloughs are hanging fire and do not seem likely to separate, poulticing for about twenty-four hours will not do any harm, particularly if you sprinkle a little iodoform on the poultice. When the sloughs have come away, and you can assist them by snipping little bits of dead tissue with the scissors and pulling them away with the forceps, you find beneath a large granulating surface, which may be more or less healthy or may be somewhat flabby, when you can bring it into a healthy condition by stimulating lotions. It is in the treatment of these cases that the greatest trouble is found. An ordinary superficial burn heals without any great difficulty, but when once you have destruction of skin you cannot be too careful in the after-treatment, because, unless you watch the case for weeks and months, you will perhaps find that in the end a terrible cicatrix has formed, which you are blamed for, although it may be from no fault of yours.

What commonly happens is this: You have got, we will say, a burn on the arm, and you are taking great pains with it. You are getting away the slough, and you are producing a nice granulating surface. You put a splint on the back of the elbow, and you let the surface granulate up gradually and slowly. Then you lose sight of your patient for some time, and after some weeks he comes back with a beautiful web stretching across from the upper to the lower arm. He has got tired perhaps of your treatment, and has gone to some old woman or quack, who has said to him, "Leave off your splint, bend the arm, and it will soon get all right." The arm has been bent and the cicatrix has been rapidly formed, and when you see the case again there is a web stretching from one part of the limb to the other, the result being very disastrous to the patient. I have here photographs of cases of that kind; and here is another on the neck. Those are the most serious cases of all where the neck has been badly burnt and where you have cicatrices drawing down the lip.

In all those cases where you have extensive burns to deal with, you must have great patience in the treatment. They are cases which remain in the hospital for months together; they wear out the house-surgeon, the dressers, and the nurses; and yet they are worth attending to, because, unless you are careful, they are sure to do you discredit.

The great secret is to superintend the granulating wound, and keep it on the stretch while it is healing. You cannot have a better example of this than the one which I mentioned just now of the arm. If you have a granulating surface in front of the arm, there must be a splint put on the back of the elbow, and the patient must wear it for six months. It is the same with the neck: if there is a granulating wound, the result of a burn, you must keep the child's head constantly stretched over the pillow till the wound granulates up; and even then it is well to have some form of apparatus by which you can keep the cicatrix constantly on the stretch for months afterwards, because it is not merely the healing that you have to consider, but it is the after-contraction of the cicatrix that is so serious. You must bear in mind that, although the case may look very nice, if you let it go without attention, in six months it may come back in a terrible state, and you will be blamed for it.

But supposing that, unfortunately, the cicatrix has been allowed to contract and the case comes to you for treatment, a good deal may still be done. Here is an example of a child in whom the lip was entirely drawn down—turned, as it were, inside out. The operation I performed here was that suggested by the late Mr. Teale, of Leeds, and you will find it described in Mr. Erichsen's "Surgery," with a diagram.

The everted lip was divided into three parts by two vertical incisions, the central portion being equal to half the width of the lip, and the lateral portions taking each a quarter. From the lower end of each vertical cut an incision was carried to an inch beyond the angle of the mouth, and the two flaps thus marked out were dissected up and brought together in the middle line, being fixed upon and supported by the central portion of the original lip, from which the everted mucous membrane was dissected off. The everted eyelids also were improved by making a V incision below them and dissecting them up so as to convert the V into a Y, with the result of pushing the lids up considerably. In cases of recent burn it is well to make the edges of the lids raw and stitch them together, to prevent, if possible, the unsightly eversion which is likely to follow.

When you get extensive burns about the neck, the difficulty is how to fix the parts. You have here represented in a photograph a plan which I carried out, and which I think is rather useful. The case was that of a boy who was in the hospital in 1876–77. He had, as you see, a contracted arm and neck. You see also that his head was shaved, and the reason was that I found that the only way to make a traction upon the cicatrix was to take strips of plaster up to the top of his head and to fix them to the scalp. The instrument makers make all sorts of apparatus for these cases, but they are all more or less unsatisfactory, and the reason is this: the tendency of them all is simply to pull open the cicatrix in one direction. What you want, however, is to stretch the cicatrix, which requires a great deal of ingenuity, and the best way to do it is to have a piece of sheet lead fitted to the collarbones, and another against the chin and lower jaw, and to have screws between the two which will push in opposite directions. If you thus stretch the cicatrix you will get a good result; but if you merely pull up the cicatrix, the tissues about the shoulder give way, and the patient's last condition will not be much better than the first.

Leaving that part of the subject, I want to say a word or two as to why patients die after they are burnt. In the first place, they die from shock. In the old days of crinoline, which I am afraid is coming in again, cases were not very uncommon of girls, with ball dresses on, putting the candle down on the ground just to see that the last tuck was right, and then catching fire, and being in a mass of flames at once. Those patients generally died, the burns being so extensive all over the body that the poor girls died in a few hours after great suffering. But it is not absolutely necessary that a patient should die from her clothing catching fire. We had a case, you may remember, in the hospital two years ago of a servant girl who, turning round in front of the kitchen fire, set the back of her dress alight. When she came here she was frightfully burnt all over the back and the buttocks, but, fortunately, not in front, since a burn over the front of the body is much more serious than over the back. She had to lie on her face for many weeks, and we got the sloughs away, and the parts healed nicely. Fortunately, the cleft of the buttocks had not been affected, so that the rectum and the vagina were not interfered with, and the result was most satisfactory, the patient leaving perfectly well. But where patients do not die of shock, they are apt to die, as this child did, of an affection of the lungs. They either get bronchitis or some low form of pneumonia, and die from that, or they may get diarrhœa and pass a little blood, and then suddenly die; and at the necropsy you find that there has been a curious condition of ulcer of the duodenum, which the late Mr. Curling of the London Hospital called attention to as the result of burns.

I cannot tell you why it is the duodenum particularly that ulcerates; nobody seems to know. There are two or three theories about it, but I do not think that anybody really knows. There is no question, however, about the fact that ulceration of the duodenum is apt to take place, and then perforation or possibly hæmorrhage from the mesenteric artery, and the patient dies from that. It is important, then, not to set up diarrhœa in these cases—as important in the case of burn as in a case of typhoid. Nobody in his senses would think of giving purgative medicine in a case of typhoid for fear of diarrhœa and ulceration of the bowels; and it is the same in the case of burns. You want to feed the patients well, to give them easily-digested food, and if the bowels do not act you can treat them sufficiently by enemata acting on the large intestine, but letting the small intestines alone.

Then of course you may have deaths from other causes. Patients die occasionally with cerebral symptoms—from congestion of the brain, and so on.

Before I close I want to say a word on one form of scald—the so-called "scald of the glottis," though I would rather call it "scald of the larynx," because that is what it really is. It happens generally in this way. Poor children are left in a room by themselves for many hours, and, getting exceedingly thirsty, they want to drink something, and they go to the kettle, which is boiling on the fire, and they get a gulp of steam or hot water, instead of the cold water they wished for. The result is that a child gets a scalded mouth. But no further notice is taken until in the evening it is observed that the child begins to breathe with great difficulty, and then possibly medical advice is sought. What happens is this: The scald effects the upper part of the air-passages, and after a few hours, not immediately, as the result of the application of hot steam, œdema comes on, and it is the œdema supervening a few hours afterwards which is so dangerous in these cases. In the museum of the College of Surgeons you will see a very good specimen of œdema of the larynx. It shows how all the ordinary sharp outlines of the larynx become obscured by the elevation of the mucus membrane due to the œdema beneath. The symptoms are unequivocal. The child is gasping for breath as in a case of croup, and you find that the mouth is scalded. The first thing to be done in such a case is to enclose the child in an atmosphere of warm steam, to erect a tent over the bed, and to bring from a bronchitis kettle steam underneath it. But if the case is severe that is not enough, you must at once proceed to scarify the throat. That is a simple operation, and an exceedingly useful one, and I believe if it were more frequently done early we should not have so many deaths from scalding of the larynx. You take a sharp-pointed bistoury and cover the heel of it with a strip of plaster. You then put your forefinger on the back of the bistoury so as to cover the point, and you slip your finger down the tongue until you come to the swollen epiglottis, which stands up and is three times its proper size. Then, with the point of the instrument projecting beyond your finger, you scarify pretty freely about the root of the tongue, the epiglottis and the top of the larynx, where I do not think you could do any harm. People are afraid of undertaking this simple operation because they do not know exactly where the carotid artery is! If they do not, I am sorry for them; but certainly it is nowhere near the epiglottis, any more than it is near a tonsil which they may be going to remove. I never knew any hæmorrhage occur from puncture of œdema of the larynx, and you may incise and puncture it with the greatest relief to the patient. Then you give some hot milk-and-water to gargle the throat with; and a hot linseed poultice put under the jaw would give the patient considerable relief.

Still, the question may very likely arise as to giving relief by opening the windpipe. You cannot have a better test of the necessity for interference than what is called "retraction of the chest." You see the child taking a breath, and when it struggles in doing so, instead of the ribs rising, they fall in, very little air entering the larynx, and retraction of the chest wall taking place. Whether that is due to diphtheria, or croup, or a scald, it does not matter; it is a most important symptom, and if you see it you ought to open the windpipe at once. Where will you open the windpipe? Undoubtedly at the crico-thyroid membrane. There seems to be a prejudice in some surgeons' minds against doing laryngotomy in children. I cannot see why; it is a simple operation, for you can feel the cricoid cartilage distinctly enough to be a guide, and nothing can be simpler than to make an incision through the membrane and put a tube in. Laryngotomy is quite sufficient, because, if you look at the anatomy of the parts, you will find that the œdema never goes below the true vocal cords—that was settled years ago—and you are well below the vocal cords when you do laryngotomy. The reason why I urge the operation in this case of scald, as well as in the case of a foreign body, is that anybody can do it with a penknife. If a man has not done tracheotomy on the living body, it is very likely that, having heard about the dangers of the operation, he may possibly fight shy of it; but he cannot well do so with laryngotomy, because he cannot go wrong, and therefore I advise it in these cases.

Then as to drugs. If you have time, you may try the effect of antimony, which I have more faith in than anything else. Give full doses of antimony according to the age of the patient, and be ready to do laryngotomy if required. Do not put it off too long. You will find that if laryngotomy is performed early in these cases, you will not have to reproach yourself afterwards with having allowed the patient to die unrelieved.

CAUSES OF OBSTRUCTIVE DYSMENORRHŒA. X. O. Werder, M.D., in *Pittsburgh Medical Review.*

I treat the subject mainly from a clinical point of view, and basing it largely on my own personal experience. I shall illustrate it by the clinical histories of such cases as seem to me of special interest.

Mrs. D., æt. 31 years, married eleven years, sterile, came to me in April, 1884, complaining of pain in the hypogastrium, very frequent and painful micturition, menses scanty, only lasting one day, but accompanied by severe expulsive pains. Examination per vaginam reveals a large fibroid tumor in the anterior wall of the uterus, pressing on the anterior vaginal wall. It reaches down almost to the outlet of the vagina, obstructing the latter to some extent. Uterus reaches above symphysis and feels like a round, hard tumor, slightly tender on pressure; lower boundary of the tumor can be felt about the internal os; cervix about three-quarters of an inch long. Sound passes only one inch. Injected gtt. xx Squibb's fl. ext. ergot into the heart of the easily accessible tumor. This was followed by severe bearing-down pains lasting several days. Two weeks later injected gr. jss. ergotine in the same way, which was not followed by severe pains immediately; but in two days, after hard work, the pain became so severe that she had to go to bed. I saw her a few days later, when her pulse was 104, temperature 101 ½°, suffering from constant pains, tenderness over hypogastric region. I found tumor much lower in the vagina, filling the lower segment of the uterus entirely, the cervix having totally disappeared, a very small depression in the rounded uterine tumor indicating the presence of the os; tumor is very tender to the touch, both internally and over hypogastrium.

During the next few days had chills, vomiting and all symptoms of septic infection. Decided to dilate os and remove tumor. Next morning, the day which I had appointed for this purpose, I was informed that something had "come away," which proved to be a fibroid of the size of a large orange, but I found the os as small as on the previous day. The tumor was, therefore, not expelled through the mouth of the womb, but it had found its way into the vagina through the anterior wall of uterus and vagina, which had become agglutinated. This opening easily admitted two fingers. Internal capsule of tumor remained intact. The cavity did not communicate with the uterine canal at all. I treated the cavity thus made by the tumor antiseptically, and the patient made a good recovery. She was considerably relieved of her dysmenorrhœa, not completely, however, probably on account of some peri-uterine inflammation from which she had been suffering.

Cicatricial contractions of the external os, or in the neck of the womb, caused by injuries during labor; serious inflammations during the puerperium by operations about the cervix; or, and perhaps principally, by caustic applications, may also produce such narrowing of the canal of the womb as to form a serious obstacle to the passage of menstrual blood. I have observed two marked cases of this kind.

A multipara, æt. 37 years, who has been complaining for several years, commencing some time after her last confinement, of intense bearing-down pains at her menstrual period, unfitting her for her household duties. A digital examination revealed a large cicatricial mass in place of the cervix, drawn and adherent to the left vaginal fornix. Inspecting it through the speculum, no os could be seen; in fact, the cervix was so disfigured and drawn out of shape that it had lost all resemblance to that part of the uterus. After searching for a long time, I at last succeeded in detecting a fistulous opening concealed between two folds of mucous membrane away up in the left vaginal vault. A probe entered the uterus without difficulty. Later I was able to introduce a sound. The patient had been treated years ago with caustic applications; there was also an operation performed, the nature of which I could not learn. I suspect that there was a deep laceration of the left side of the cervix, which, perhaps by the injudicious use of caustics, became adherent to the vaginal vault with the above result.

The second case is a woman who had been delivered of a child eleven years ago, and has been suffering with severe dysmenorrhœa ever since, but had never, up to this time, sought any medical advice in the matter. It shows how skillfully nature can perform trachelorrhaphy. Emmet himself might have been proud of the result of this case if it had not been for one great defect, namely, placing the very narrow os on the left side of the cervix, at the juncture of cervix and vagina, instead of in its usual anatomical location at the uterine outlet. A fine linear cicatrix could be seen through the speculum, beginning near the right vaginal junction, carried down to the cervical orifice, uniting this and continuing to the left vaginal junction, there leaving a very small opening through which the menstrual blood had to be forced at every catamenial period. This cicatricial line was almost as fine as you generally see it following Emmet's operation. If nature had been a better anatomist, her success would have been complete; but as the result of this anatomical blunder the patient not only became sterile, but suffered the most intense pain during every menstrual period. This woman undoubtedly had a deep bilateral laceration of the cervix, with probably some slight sloughing, or abrasions at the external os, which nature united with the result described.

Why these two cases should suffer pains at their menstrual periods seems quite clear. A normal os, placed at the side of the cervix, instead of at the outlet of the cervical canal, would probably be the cause of considerable suffering during the catamenia; but in these cases there is an additional reason why their monthly flow should be accompanied by such dysmenorrhœa, because here we not only have a small orifice, but also one surrounded by cicatricial tissue, which is inelastic and unyielding, not permitting of softening and dilatation, as it does in its normal condition.

The so-called pin-hole os, especially observed in badly developed uteri, and generally accompanied by a conical vaginal portion, very often causes dysmenorrhœa; but in such cases, unless the orifice be so small as barely to admit a small probe, I would be inclined to attribute the pain, to a large extent, to the defective development of the blood-vessels of the uterus, they not being able to accommodate the increased supply of blood sent to the uterus at this period, combined with an imperfect condition of the uterine muscles, producing inelasticity and rigidity of the uterine structures. That a small os and an infantile uterus are not always causing dysmenorrhœa I can prove by a case at present under my treatment. The menses are absolutely painless, and her only motive for seeking treatment is her sterility.

We may have obstructive dysmenorrhœa in cases in which there exists only a relatively narrow condition of the cervical canal, *i. e.*, the flow of blood may be so profuse that there may be considerable difficulty to pass through the canal, or it may form coagula, which only forcible contractions of the uterus can expel. The reverse of this may also take place. A case with a decided stenosis of the neck of the womb may have no dysmenorrhœal trouble because the menstrual flow is very scanty and its escape slow.

In a given case of dysmenorrhœa I would be inclined to exclude any mechanical causation, wherever I would find the uterine canal sufficiently patulous to pass an ordinary Simpson's sound, and would advise to look for an explanation in the surrounding structures of the uterus.

Though obstructive dysmenorrhœa generally has its seat in the uterus, we occasionally find cases where the impediment to the escaping blood is situated in the vagina or at the vulva. I will not speak of neoplasms of the vagina as obstacles to the menstrual flow, but confine my remarks to stenosis of this part of the genital canal, either congenital or acquired. Contractions and cicatricial bands in the vagina, due to injuries in childbirth, aggravated forms of colpitis, or to the caustic action of chemicals, may, though not frequently, give rise to obstructive dysmenorrhœa.

Of congenital narrowing of the vagina, or partial atresia (vagibicamerata, as it has been called), I have seen one case in which the monthly suffering was very acute. The patient, æt. 26 years, menstruating since her sixteenth year, always complained of severe bearing-down pains during her catamenial period, which only lasted two or three days. On examination, I found the external genitals normal, but about one and one-half inches from introitus her vagina became so contracted that at the first examination not even a small probe could pass it. Subsequently, when examined under ether, Simpson's sound passed the constriction; I dilated it then with my fingers until I was able to pass two of my fingers to the cervix. External two-thirds of the vagina in this case represented the shape of a funnel, the wide portion being at the introitus vaginæ, and the tube at the stricture. The posterior part of the cervix was bound down to the vagina by strong bands, while the uterus seemed to be enlarged and retroverted by the broad ligaments, thickened and very tense. At a subsequent examination about a month later, the uterus was in normal position, very much smaller than before; broad ligaments were thickened and tense, feeling like bands put on a stretch. Menstruation following the dilatation of the stenosis was still painful, but not of such a bearing-down nature as before. An interesting fact in this case is the decrease in the size of her uterus after dilatation. I can only explain this by a process of involution, following the removal of the obstruction to the menstrual blood.

Complete atresia vaginæ necessarily causes retention. Nature seems to provide, however, in some of these cases for the escape of blood; at least out of the four cases of atresia of the vagina, which came under my observation, if I may include the one just reported, there was a more or less regular show in three, but always accompanied by severe bearing-down pains, which generally came on several days, even a week before the menses became established. In all, especially the following, they were rather scanty.

Mrs. N., æt. 33 years, menstruated first at eighteen. Long before the first appearance of her catamenia, she had pains in her legs, so that she could hardly walk, pains in abdomen and pelvic region, and, two or three weeks before, she was confined to bed in a hospital, during which time she had to be catheterized. She states that an abscess then broke in her womb, discharging a great deal of matter and blood for two or three days. This was followed by immediate relief. She had been discharging pretty regularly ever since, but suffers severe pains at every menstrual period; with very few exceptions the pains are especially in her left side and leg, so that she can hardly move that limb. She had inflammation of the bowels three years ago, since which time the pains have increased. Molimina, consisting of sharp, bearing-down pains, commence a week before her expected period, and are aggravated during one or two days immediately preceding it. She is married thirteen years, but sterile; menses regular, but always scanty, only lasting one to two days. During the intermenstrual period she feels relieved, but is never entirely free from pain. On examination I found the vagina, about one inch from the introitus, ending in a blind pouch; back of this, by pushing up the septum a little, the uterus can be felt, small, and surrounded by a number of cicatricial bands, which draw the fundus uteri slightly over to the left side. To the left and in the centre this pouch is elastic, and can be pushed up to a considerable degree. The right side, however, seems to be one large, unyielding cicatrix, in the center of which a soft, velvety spot as large as a bean can be felt, which examined through the speculum looked like an ulcer, covered with exuberant granulations. The whole septum was repeatedly examined with great care for the purpose of finding some small passage to the uterus, but with negative results. This brought me to the conclusion that the menstrual blood passed through some minute fistulous tracts entering into this ulcerated or granular surface above described, which seemed to lead immediately to the cervix. In this opinion I was strengthened, when I found another case shortly afterward, which presented an almost identical condition. She passed out of my hands without my having been able to make an examination at her next menstrual period, as I had intended. A short time ago, however, she returned, a year having elapsed since I had made the first examination, and this time I had the opportunity to examine her during her catamenia. Upon introducing a speculum I found this same granular spot or erosion on the septum unchanged. From it was oozing some dark blood. Thinking that I had, perhaps, produced this oozing by irritating these granulations in the introduction of the speculum, I repeatedly wiped them dry with absorbent cotton, and used slight compression, but the oozing continued. I was now satisfied that the blood had no other escape than this, when I accidently discovered on the left side, just opposite the other, a small point, not larger than the head of a pin, having the appearance of a little nipple, as we see it occasionally at small fistulous openings, through which drops of blood exuded. Through this I proceeded to pass a probe to the depth of almost three inches, which, as I could feel with a finger in the rectum, passed into the uterus. This probably, and the minute fistulous tracts opening into the ulcerated spot on the opposite side, were the narrow passages through which her menstrual discharges had to pass every month.

THE AFTER-TREATMENT OF TRACHEOTOMY IN DIPHTHERIA. By G. L. Cheatle, M.R.C.S., L.S.A., late House Surgeon and House Physician of King's College Hospital.

By the kind permission of Dr. Beale, not only am I allowed to publish these cases, but by his sanction was allowed during my appointment as house physician to adopt a treatment of them which has resulted in two cases recovering out of five operated on. Unfortunately, lately the mortality in these cases at King's College Hospital has been rather severe. The chief principle of this method of treatment is rest and the strict attention to its details. It will be convenient to describe it under the headings of (1) General and (2) Local.

General.—Under this heading I would include every detail in the prevention of exposure at the time of operation, warm blankets, hot water bottles, warmed sponges, warmed tube, and immediate transference to a tented bed warmed (up to about 70°) and moistened by steam. Chloroform was administered in every case during the opertion, and the tracheotomy done was the low one.

Local.—This is the part of the treatment I particularly wish to call attention to. It consists of the choice of tube, and the clearance of the tube and the trachea. The tube found most convenient was the ordinary lobster-tailed low tracheotomy tube, the inner or lobster-tailed portion of which slips in and out with the greatest ease and least disturbance to the patient. In keeping the tube and trachea clear, the insertion of feathers, as was generally the custom here, was totally abolished; primarily for this reason, that the irritation they caused of so delicately constituted a tissue as the lining membrane of the trachea must have tended to increase or produce inflammation, and, considering the temporary constitutional tendency, the induced inflammation would probably be of a diphtheritic nature. The air warmed and moistened by kettles, and the damp gauze covering the tube, not being found sufficient to keep the tube and trachea clear, two drops of a warmed solution of bicarbonate of soda (twenty grains to an ounce of water) were dropped down the tube every half-hour. This, together with occasional washing of the inner tube, and the catching of expectorated matter by the nurse to prevent inspiratory effort sucking it back again, were found to be all that was necessary. If the progress of the case is satisfactory, it is an obvious advantage to know when the tube may be with safety permanently removed. I was helped in the second case by my experience in the first. I placed a piece of cotton fibre in front of the nostrils two or three times a day, and when the expired air moved it I ascertained how the patient bore occlusion of the tube aperture. If satisfactorily, the tube was permanently removed. In the second case it was on the fourth day after the operation, and in the first case on the fourteenth. It probably would have been removed earlier in the first case had it been watched in the same manner. As constitutional treatment, these cases were all given, in doses varying with their age, sulphate of quinine, bromide of potassium, and sal volatile. The objection raised to this prescription was that bromide of potassium is a depressant, and therefore injurious in a depressing disease. I have given it to adults as well as to children, and they were all more composed under its exhibition than without it.

In one case, C. C——, a perfect cast of diphtheritic membrane of the trachea, its bifurcation, and smaller bronchi was coughed up through the tube. So perfect a cast is it that one may suppose that the soda solution may have loosened the membrane, or that the bromide of potassium may have some action resembling its allied salt, iodide of potassium, in the action the latter has in bronchitis in the liquefaction of the sibilant rhonchi, and if so, the bromide of potassium and allied drugs may be granted some day an exfoliatory effect on diphtheritic membrane. The only remark on the cases necessary is to point out the fatal case of C. H——, æt. 1 year and 8 months, whose case was so hopeless from the first that the operation being performed at all was a questionable advantage. Besides being a badly nourished and emaciated infant, there were before operation dullness and tubular breathing at the base of the right lung, so that this can hardly be regarded as a fair trial case. The other two fatal cases were decidedly promising ones compared with the two cases of recovery.

G. M——, æt. 2 years and 3 months. Family and previous history very good. Had been ill two days before admission. On admission the child was otherwise well nourished and healthy looking; lips cyanosed; eye-lids puffy; marked inspiratory stridor and general signs of dyspnœa; sinking in of ribs; instinctively trying to produce vomiting by inserting the fingers into the back of the throat; temperature 99.4°; a trace of albumen was found in the urine with the nitric acid and picric acid tests; membrane on both tonsils; no limit to be seen below, and apparently spreading behind uvula; also a profuse discharge from the nose.; no hæmorrhage; glands enlarged; operation performed; tube removed on the fourteenth day after it; the albumen eventually increased to one-third, and disappeared gradually; no cast; few red blood corpuscles; left hospital twenty-six days after admission; no paralysis; complication; bronchitis.

M. M. S——, æt. 3 years and 10 months. Family and previous history good. Had been ill three days before admission. On admission, the child was otherwise healthy-looking and well nourished. Membrane on both tonsils, more on right than left; glands of neck enlarged, inspiratory stridor and marked dyspnœa, not so marked as in the above case. Temperature 98.6°; trace of albumen in urine. After operation the temperature rose to 105°; it gradually came down next day and remained down. The albumen eventually increased to one-fifth, and disappeared gradually. Tube left out on fourth day after operation.

A. M. S——, æt 1 year and 6 months (sister to the above patient). Had been ill for three days after her sister had been admitted. On admission, the right tonsil was covered with membrane; glands of neck enlarged; trace of albumen in urine; inspiratory stridor and cyanosis, and general sign of dyspnœa. Death occurred about sixteen hours after operation. No necropsy was allowed.

C. C——, æt. 4 years and 10 months. Family and previous history good. Had been ill for two days before admission. Both tonsils covered with membrane; glands enlarged; inspiratory stridor and general signs of dyspnœa; temperature 101.8°; ceased breathing during operation, but revived on insertion of tube; died nineteen hours after operation. This is the case in which the cast spoken of above was expectorated. No necropsy was allowed.

C. H——, æt. 1 year and 8 months. Family history good. Had always been delicate; no actual disease; had been ill some days before admission; no accurate history; weakly, delicate, and badly nourished child; membrane on both tonsils; glands enlarged; inspiratory stridor and laryngeal obstructive signs; dullness at base of right lung and tubular breathing; no urine could be obtained for examination. Temperature 101°. Death occurred thirteen hours after operation.

A Case of Acute Lead Poisoning with Respiratory Paralysis; Rapid Recovery. By F. Rowland Humphreys, L.R.C.P. Lond.

George G., æt. 27 years, pianoforte maker, sent for me, and was first seen at 11:20 P.M. on Sunday, Nov. 25th, 1888. He complained of pain in the abdomen and inability to breathe. He said that at 6 P.M., when he had his tea, he was quite well. After it the bowels were moved, and later he had slight pain in the right hypochondriac region. At 8:30, while out walking with his wife, he was seized with very severe pain in the same region, and vomited. He got some brandy, and, being relieved by it, managed to get home, though he could hardly drag his legs along and was in great pain. This pain, still persisting when seen, was described by him as shooting from the immediate neighborhood of the gall-bladder across the epigastric to the left hypochondriac region, and then turning upwards. This is the patient's own repeated description put into medical terms. His face was very slightly flushed, and he was evidently in great pain; this was of a remittent nature. He was collapsed. The pulse was very weak; slow, 50 or less, and irregular as to volume and force—less so in rythm. The respirations were extremely hurried, 130 or more, and between the breaths the poor fellow kept complaining of inability to breathe. Inspection of the chest showed that the respiratory movements were entirely confined to the lower ribs on the right front of the chest, where the diaphragm was working hurriedly. The chest was collapsed on the left side, and to a less degree on the right. The left was at the position of complete expiration. On the left side the chest was absolutely dull to percussion, and also on the right, but to a less extent. On auscultating the left chest a distant roaring sound was heard; on the right side bronchial breathing was noted. The præcordium was decidedly hyperæsthetic where the brandy was in the first place injected. The abdomen, at first somewhat resistant, after a moment or two allowed deep pressure. Nothing abnormal was made out. The pupils were normal in their reaction to light, though sluggish. For distance their accommodation was not tested. The conjunctivæ were injected. He complained of pain in the suprasternal region and in the throat, but there was scarcely any appreciable change in his voice. The palate was in a state of complete relaxation, and there was considerable difficulty in swallowing, not only from the rapid breathing, but also from some paralysis, apparently of the pharyngeal muscles. At first he was unable to hold up his head, though he could move it from side to side on the pillow. The sterno-mastoids and the other muscles of forced respiration in their neighborhood were absolutely motionless. He could not support his body upright in bed; the arms were unaffected apparently; the legs could be adducted and abducted, at any rate, and the knees flexed on the stomach. The lower extremities were cold. On first entering the room I thought the man was dying, and injected a few minims of brandy into the left pectoralis major. This improved his condition, the pulse becoming full, hard, and quicker. The effect quickly passed off, however. During the next paroxysm of pain he was completely "doubled up," and I injected into the region of the gall-bladder one-sixth of a grain of morphia and one-hundredth of a grain of atropine, after a second injection of brandy. The pain now almost entirely ceased, and before I left him he was able to sit up in bed, and could swallow—that is, about one hour and a half later—the respirations having sunk to about 100, and the pulse risen to 70. His mind was perfectly clear throughout, and he was able to answer questions, though in gasps. During the paroxysms he did not appear to hear. There was also a weak, infrequent cough.

On the following day (the 26th) he had perfect movement in the respiratory muscles, though the breathing was slow, and there was a little wheezing on the left side. Temperature subnormal.

Nov. 27th.—Respiration 16; pulse 52; temperature 96.6°. Abdominal reflexes nearly absent; tache cérébrale present on the abdomen, and to a less extent on the chest; knee-jerks weak; ankle-clonus present; posterior muscles of the legs rigid.

28th.—The patient tells me he was last week doing lead casting in the course of his employment, and the day before his attack was mixing red and white lead. At tea on the 25th he had shrimps, and it is probable that the action of the finger-tips in picking the shells off worked the lead from under the nails on to the fish, and, thus seasoned, he swallowed them, as he subsequently found lead under the nails. The gums showed the lead line well marked, and there was apparently no other source but the lead under the nails for the poison, as the lead was not touched in the process of casting or afterwards, nor was any other person in the house affected.

The question remains, what was the immediate cause of the paralysis and of its rapid disappearance? Shock alone would not account for it, because the pupils were not dilated, as is always the case, I believe; nor was the cutaneous circulation altered, nor would the small dose of morphia have had such widespread and permanent effect on the sympathetic. The course the pain took was that of the stomach and œsophagus; this indicates implication of the pneumogastric nerve. The symptoms and the result of the treatment confirm this view. To take the last first. The improvement in respiration and pulse can be accounted for if, looking upon the case as one of inhibition of the respiratory centre by the vagus, we remember that atropine injected in even the smallest doses has the power of preventing this inhibitory action of the vagus. Indeed, this was what first gave me a clue to a rational explanation of the observed phenomena. The inhibition was no doubt set up by excessive stimulation of the gastric terminal branches transmitted to the central ending of the nerve by its main trunks, and through the respiratory centre could have caused the slowing of the heart; this was very considerable, if the rate of the breathing is compared with it, the usual proportions being reversed. The temporary paralysis of the palate might be accounted for by regarding it as part of the respiratory system. The known unequal excitability of the branches of the vagus might account for the absence of change in the voice. The continuance of action of the phrenic nerve on the right side can only be accounted for by supposing that the respiratory centre was unequally affected. I forgot to say that soon after the pain ceased the urine was passed; a later sample showed merely excess of phosphates and urea. The amount was slightly in excess of the normal quantity. The bowels were confined on the day following the attack. My remarks are based on the third edition of Landois and Stirling and on Foster's text-books.

PROCEEDINGS OF SOCIETIES.

PITTSBURGH OBSTETRICAL SOCIETY.

Regular Meeting, April 4, 1889.

LACERATIONS OF THE CERVIX UTERI.

R. STANSBURY SUTTON, M.D., President, in the Chair.

Dr. Sutton: It has been suggested that we devote the evening to the discussion of the lacerations of the cervix uteri occurring in labor;

their significance, their importance, their immediate and their remote results; the treatment prior to 1872 and the treatment of later times, in our own country and in foreign countries. The probability is that no woman passes through a confinement without receiving a laceration of some fibers of the neck of the uterus. The amount of laceration which she receives is in the first place dependent largely upon the size and presentation of the child; secondly, upon the rapidity of her labor; thirdly, upon the unskillful application of badly constructed forceps. Lacerations of the cervix as a rule, however, occur without reference to the skill of the doctor, or without reference to whether there is a doctor present or not; hence, as a rule, the profession is in no manner responsible for this particular injury in women. The principal significance of a laceration of the cervix is proof that a woman has been pregnant, that she has been delivered either before or at term. Emmet has made the assertion that laceration of the cervix always occurs during criminal abortion. This would go to indicate that the size of the fœtus was not alone the cause of laceration of the cervix, and we might infer that it was from premature dilatation of the cervix in preparing for such a measure. On the other hand, it might be due to violence in the attempt to dilate the cervix with a view to emptying the uterus.

The importance of lacerations of the cervix is certainly a subject of wide difference of opinion, due doubtless to the experience of various individuals in the classes of cases with which they meet. It is my own conviction that a woman had better break her femur in labor than to deeply lacerate her cervix. From one she will recover in six weeks; from the other she will probably never recover, unless some surgeon or physician properly operates for her laceration.

The immediate result of a deep laceration of the cervix is a cessation of the process of involution; that is, the fatty degeneration and absorption, which should go on in the uterus after labor. This process of involution being stopped, we have the uterus left anywhere from three to five and a half inches deep at such a time, when it should have been reduced to three inches. Such a uterus shows a cervix which is thick, which is congested, which is supplied inordinately with blood. The uterus, in the course of time, develops upon its lining membrane vegetations varying in size from a bird-shot to a small grape. These become the provokers of menorrhagia and metrorrhagia. From this loss of blood comes anæmia, neurasthenia, and a general breaking down of the powers of the woman.

Going back, then, to the heavy uterus and the sub-involuted uterus, it is too heavy; by the simple force of gravity it descends in the pelvis until the lacerated end presses upon the posterior wall of the vagina. Later, the fundus of the uterus moves to the rear, the axis of the uterus becomes a continuation of the axis of the vagina, and as the uterus descends, the neck appears near the vulva —sometimes as low as the vulva—and complete procidentia may become the eventual result. In addition to the cervix being lacerated and spread out, the vaginal attachment, which is above the laceration or coincident with the laceration, becomes a constricting band to the cervix. This constricting vaginal band preventing the reflux of blood throughout the fundus of the uterus, sets up and maintains a congested cervix, a cervix which is red and swollen ; the surfaces of the laceration become granular, and the cervix fills with glands, immensely congested and covered with an albuminous secretion like white of egg. This condition is what was called ulceration of the cervix. It was that condition upon which Bennett wrote a book, without explaining the cause of the disease. This largely congested cervix is constantly being depleted by the exudation of the serum of the blood, and by the exudation of mucus, by the exudation from the glands of Naboth, and a veritable drain is set up. This condition untreated, either medically or surgically, throughout a period of time, becomes a most important factor in the future establishment of malignant disease in the neck of the uterus. It is a fact beyond all dispute that ninety-five per cent. of all women who suffer from cancer of the uterus develop it in a neck which has been lacerated in labor. Allowing time to elapse, under any form of treatment save that of surgical treatment, nature makes an effort to repair the lacerated cervix. The upper end of the laceration begins to granulate, and as the granulations fill up the cleft, they contract and the two sides of the laceration are drawn together and fixed by a band of cicatricial tissue, which is so termed, but which is really condensed hypertrophic tissue. If in the process of healing small, hard cicatrices form, there may be afterwards reflex neuroses of a most peculiar type, sometimes producing hysterical convulsions and reflex paralysis. In all cases they produce more or less nervous disturbance. This reflex action disturbs the digestive organs. This process of cicatrization, as we will call it, may go on in a laceration of the cervix until the marks of the old laceration are almost obliterated. In the meantime many glands have by reason of the inflammatory action in their walls burst, emptied their contents and become obliterated, save their small, hard sacs lying beneath the mucosa.

The question of treatment in these cases is oftentimes so vital that if a mistake is made, no matter how much treatment of a general character is administered to the patient, she will not recover until the old laceration is cleared out, the edges stitched together and good union secured. Now, after a laceration which is plain, in a double laceration, where the neck of the uterus is spread out and when you can run your finger around it and find the circumference of the cervix greater than that of the body of the uterus, it is clear that such a case is one for operative interference. Then again, where the neck of the uterus has healed to some extent, and where the marks of the old laceration have been greatly obliterated, you will only be able to determine that the laceration is the cause of the trouble by introducing your finger into the vagina and passing the finger over the cervix and finding on it spots which are exceedingly tender, which are just as tender and distinctly felt by the fingers as a corn upon your toe, and some say that these are corns upon the uterus, and they are surely more like that than anything else of which I know. It follows that frequently neurotic cases are cured by operating on the cervix, cutting out the wedge-shaped piece in the line of the old laceration and stitching it up again.

Now, what is the proper treatment? How are we going to treat these cases? In my pupil days, and in yours, these cases were treated by frequent applications of nitrate of silver, either solid stick or strong solutions. It was an assertion among women in those days that they didn't care to be treated, that they never heard of anybody being cured; yet so many were benefited by treatment that there was always a running to the doctors. But in the present day many such women are absolutely cured. Immediately prior to the operation, and at the time of the operation, the vagina should be thorougly washed out with hot water. The patient having been prepared, the operation is performed by simply freshening the edges of the laceration, cutting out the hard tissue, then with silkworm, catgut, silk, or with silver wire securing the edges in neat and close apposition. The operation having been completed, the vagina should be washed out with hot water at a temperature of 108 to 115 degrees. The cervix should then be covered with iodoform and the patient put to bed. Unless there be some special reason for it, there is no occasion to be particular about her diet, permitting her to follow her own wishes. There is no occasion to draw her urine if she can pass it. There is no occasion for giving her vagina any further attention for a week. At the end of the week the stitches should be carefully removed. Her vagina may then again be irrigated, and a little boric acid may be dusted over the surface, and she may be returned to bed until the fourteenth day, when as soon as convenient, she can get up.

Such has been the plan I have followed in the treatment of lacerations of the cervix. I probably have now made somewhere in the neighborhood of three hundred operations. I have never yet seen a woman become ill as a result of a cervix operation. I have never seen a woman die from such an operation. I have seen but few women on whom the first operation failed, and I have never seen one on whom the second operation failed, and I have re-operated on all the cases I know of wherein the first operation was a failure. Now, what are the remote results of lacerated cervix operations? They vary somewhat in the particular that some women show the benefit of their operations within a month, others failing to show the benefit of them until an entire year has elapsed; but sooner or later, if the operation has been radical, the cervix completely relieved, the woman will be benefited and in a great many cases cured. I have seen a number of women who after a laceration had been sterile for a long period—five, seven, eight years—again conceive within a year after a cervix operation had been properly done.

Now, the operation has been on trial since 1869, almost twenty years, and it has completely fastened itself upon the profession; it has completely fastened itself upon womankind, and it has almost completely overturned all the old forms of treatment. In England the operation took hold of the profession very slowly, and it cannot be said that it has yet taken hold completely, but it is fast doing so. In France it has taken a good root, and in Germany it has also taken good root; but in Germany the method of operating differs somewhat from the method herein given, because in Germany the operators cut away the exposed surface or face of the laceration, then pare the edges and bring all together, having first turned in the vaginal mucous membrane, covering the lip. The results of the operation in Germany are identical with those in this country so far as the restoration of the patient's health is concerned.

Dr. Duff: The speaker has said that a lacerated cervix was diagnostic of a previous pregnancy, hence we would infer that a lacerated cervix might, in a medico-legal sense, be brought in as testimony to show that a woman had not been virtuous, or, in other words, that she had been at some time pregnant and was delivered prematurely or at term. I know of lacerated cervices in women who were never pregnant. Within two weeks I saw a badly lacerated cervix from a uterine fibroid. It had been expelled from the uterus and was hanging in the vagina by a pedicle and I removed it. The cervix was very badly lacerated—a double laceration. On a former occasion I remember having seen a laceration of the cervix from another uterine fibroid. It is not necessary to discuss this matter, only to make mention of it. The gentleman stated that women who had been sterile for a long time would conceive after having been operated upon properly. This is a truism, and yet in that connection while it is not the rule for women with lacerated cervices not to become pregnant, it is almost the rule for them to abort if they have badly lacerated cervices. I have had a little experience indirectly with a few cases in which an operation has been performed, where the woman aborted after the operation, and in two cases the result was fatal. There are some cases of lacerated cervix in which the women do not suffer materially. I have attended women who have had lacerated cervices in several confinements, and they would go to term and never complain.

Dr. Blume: The opinions held by German gynæcologists are not quite the same as those held in this country. Laceration of the cervix is considered to be pathological if there are grave symptoms. As Dr. Sutton says, there is seldom a woman who escapes without a tear in the cervix. I have seen one woman, and attended her, who had two abortions; had a double laceration of the cervix, and afterward had two children and two abortions. She aborted on fifth or sixth month and I proposed to operate, but she refused. Her uterus was slightly enlarged, the neck of the womb was thicker than usual. I believe we can do very well without operation; that is so far as my own experience goes. In regard to cancer and what is called degeneration of the cervix I agree fully with Dr. Sutton. I believe, however, it is not proven yet that this is always the commencement of cancer of the neck of the womb, and we must not forget that even in barren women we find cancer of the neck of the womb.

Dr. Kearns: I have never seen a uterus where there was any laceration, that I did not observe prolapsus of the uterus of a prominently marked character. There is always a slight bleeding, not enough though to cause the patient to apply to a physician. There is, also, always a slight amount of sub-involution. As the womb descends, it takes on one of two inevitable positions, either anteflexion or retroflexion. I will say that in my own experience, anteflexion is the most common, and it is the least pernicious in its effects, but retroflexion is very common also.

Dr. Sutton: The point taken by Dr. Duff with reference to lacerations produced by the delivery of fibroid tumors is well taken. I have seen laceration of the cervix occur just as he has stated. The remarks of Dr. Blume are in accord with my own views on the subject. I have seen Emmet's operation fairly well performed in Germany, and I will say here as a compliment to German surgeons, that since I have made a sojourn among them, and learned how to use a knife on the neck of the uterus, instead of a pair of scissors such as Emmet advises, I have almost entirely given up the use of scissors.

HARVEIAN SOCIETY.

Meeting, April 11.

HYSTERIA.—HYSTERICINE HEMIPLEGIA.

THOMAS BUZZARD, M.D., F.R.C.S., President, in the Chair.

Dr. Stephen Mackenzie read a paper on certain points in hysteria illustrated by cases, some of which were exhibited at the meeting. The first case was one to which he was indebted to Mr. Eastes for bringing that evening, and was that of a young woman, æt. 27 years, who for about three years was the subject of spasms of the inspiratory and laryngeal muscles that gave rise to a peculiar noise. This for a time was incessant or nearly so, and when absent was induced by taking food. By persevering treatment by faradaism and artificial feeding she was temporarily relieved of her complaint, but relapsed from time to time. One point of interest was a hysterogenic zone over the left elbow, pressure on which excited the attacks when absent; lifting the arm also induced an attack. The patient was introduced to the meeting free from spasm, was made to raise her arm, which brought on an attack, but which was controlled by drinking a tumblerful of water. It was pointed out that the case belonged to the category of respiratory and laryngeal spasm, which was not uncommon, and a case was related of a "barking" boy. Mr. Eastes' case, however, was an exaggerated example, which proved very rebellious to treatment. Another case of a similar kind in a lady over fifty years of age was also mentioned. The next case referred to was that of a girl from whom a large number of pins and needles came out at various parts of her body. Her account was that she had swallowed a packet of needles. Drawings were shown of the position of the pins and needles, which led to the irresistible conclusion that they had been voluntarily placed beneath the skin in the position found. It was suggested that a wandering needle had originally excited attention and interest, which had been kept up and intensified by intentional deceit. A series of cases was next narrated in which incontinence of urine was present in cases of hysteria. It was usually and rightly held that incontinence of urine was rare in hysteria, but two cases were mentioned in which this symptom was present in hysterical girls. In both cases the hysteria was of a severe kind, bordering on insanity; in one case it was of an almost maniacal character; in the other, of the nature of melancholia. It was next pointed out that no line of demarcation could be rigidly drawn between hysteria and insanity; and a case was shown which had commenced as hysteria, but which was practically one of melancholia. The importance of endeavoring to treat such cases without sending them to an asylum was insisted on, but it was admitted that some of the patients ultimately became definitely insane. The last case shown was that of a young woman, æt. 21 years, with hemianæsthesia of the right side and hyperæsthesia of the opposite. There was paresis with contraction of the anæsthetic side, accompanied by vaso-motor paresis of the paretic arm. There was no paralysis of the face on the hemiplegic side. There was contraction of the pupil on the side opposite to the anæsthesia, and there had been ptosis. The knee, wrist and elbow jerks were exaggerated on the paretic side. The plantar reflex was absent on the right side, but present in the left. There was ankle clonus on the right side. There was no muscular wasting in the paralyzed limbs, and the electrical reactions were not materially altered. There was no doubt about the hysteria, but the question was whether there was anything more; whether, as had been proved to occur in some cases, the functional disease had gone on to structural changes.

Dr. George Eastes gave a further account of the first case mentioned by the author of the paper. She was always a stammerer, and diarrhœa and family troubles seem to have been predisposing causes.

Dr. Walter Pearce showed a remarkable case of hystericine hemiplegia in a cook, æt. 31 years, who was admitted into St. Mary's Hospital for cramp and weakness of the left side. The family history gave a decided heredity of insanity and alcoholism, in addition to which several members of the family had died of consumption. The patient had been subject to fainting fits and hysterical attacks; menstruation was scanty and frequent, preceded by much pain, and had occasionally determined the onset of the fit. The breathing was rapid —60 per minute—without apparent cause. She stood with difficulty. The left arm was flexed close to the side, and in a state of tonic rigidity. She could only walk with her left foot when allowed to look down at it. The sense of pricking and of heat and cold was entirely lost on the left side, whether of the face, nose, lips, or any part of the trunk or extremities.

REVIEWS.

THE EAR AND ITS DISEASES, BEING PRACTICAL CONTRIBUTIONS TO THE STUDY OF OTOLOGY. By Samuel Sexton, M.D., Aural Surgeon to the New York Eye and Ear Infirmary; Fellow of the American Otological Society; Fellow of the New York Academy of Medicine; Member of the Medical Society of the County of New York and the Practitioner's Society of New York. Edited by Christopher J. Colles, M.D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Original Illustrations. William Wood & Co., New York.

In reading the title of this book one would be led to expect a complete treatise on ear diseases; but the number of pages contained in it immediately rouses the suspicion that a qualification will be made by the author in his preface—and such is the case. We are informed that the author has not attempted to present a complete treatise on the ear to the profession, and he expresses the hope that his treatment of the subjects to which he has directed more special attention, "may be found of service to those interested, whilst not devoid of interest to the otologist."

The author's "early acquired vogue of noting in detail matters of practical interest in private and hospital practice" has enabled him to present the conclusions drawn from 10,000 cases of ear disease, and it has been only at the "earnest request" of his friends that he has been induced to formulate his views in writing. The book is divided into four parts. The anatomy and physiology of the ear and contiguous parts, the causes of ear disease, the wounds, injuries and diseases of the ear and their treatment, and, finally, what is comprised under the indefinite head of "Miscellaneous Articles."

If there is anything else comprised under the head of practical otology than is comprised under these four headings we would like to know what it is. There seems to be a growing tendency on the part of American otologists to write a book by compiling cases. What a practical man wants is the conclusions of an author and the upshot of his experience. The recital of cases is something that medical writers are gradually commencing to lay aside, and may nothing be put in the way of preventing the consummation of their purpose!

The tiresome recital of cases under the heads of "remarks on the exterior muscles," the "relations of the vaso pharynx," "of hæmatoma" and many others are inexcusable; and one feels rejoiced at turning over the pages to find that the author is willing towards the end of the chapter to treat us to some of his *opinions* delivered in his own interesting and peculiar style. We fail to see the *raison d'être* of a *photograph* illustrating the position of men around a gun at one of our neighboring forts, on the premature explosion of a shell. The description was vivid enough and the recital quite sufficiently minute. The picture adds to the distinctive character of the book as an otological narrative rather than as an otological scientific disquisition. Barring the compilation of cases, the chapter on othæmatoma is extremely valuable; the writer has well digested the literature on this subject and presents his opinions in a conclusive if not short and epigrammatic style; but here treatment suffers at the expense of narrative. The Virgilian quotation illustrating the owl with the ashes between Entellus and Aeneas, while interesting, might have been omitted without damaging the value of the chapter as a practical or theoretical treatise. The author has done good work in the treatment of suppurative middle ear inflammation by excision of the drum head and oricles. He can speak on this subject with perhaps more authority than any man in this country. His methods, however, and his instruments for performing this operation differ but little from those of Schwartze , who stands *facile princeps* in this matter. The few chapters on the subject of aural hygiene and the education of deaf school-children is well worth the attention of the Board of Education. The chapter on the "effect of high atmospheric pressure" in the ear is unique.

On the whole if we were asked to express a succint opinion of the book we would say: It is an otological luxury and cannot be said to fill any sort of want. If it is in the purpose of the author to revise or enlarge this work in the future it is to be hoped that he will adopt a style more after the order of a text-book, and sacrifice the flowing period to the epigrammatic climax.

OUR LIBRARY TABLE.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION AT ITS TWELFTH ANNUAL MEETING. Official Report of the Proceedings by the Secretary, G. H. Tilden, M. D.

This volume of eighty-seven pages is full of interesting papers which are followed by full discussions. Among the most interesting are the discussions on The Value of Salicylic Acid in the Treatment of Diseases of the Skin, Personal Observations on Skin Diseases in the Negro, and on The non-Identity of Lichen Planus and Lichen Rubre. The volume ends with a list of publications and writings of the members of the Association during the year, from July 1, 1887 to July 1, 1888.

ELECTRICITY IN FACIAL BLEMISHES. By Plym. S. Hayes, A.M., M.D., late Professor of Chemistry and Toxicology, Woman's Medical College; Professor of Analytical Chemistry, Chicago College of Pharmacy; Professor of Gynæcology and of Electro-Therapeutics, Chicago Polyclinic, etc., etc.

The first four chapters of this little volume of 128 pages are taken up with a full description of the histology of the skin, the necessary apparatus, and the mode of operating for removal of superfluous hair by electrolysis. The fifth chapter is devoted to the description of the removal of other facial blemishes, as port-wine stains, moles, etc. The sixth chapter is filled up with "donts."

IS MORE CONSERVATISM DESIRABLE IN THE TREATMENT OF THE JOINT DISEASES OF CHILDREN? By A. B. Judson, M.D. Reprint from the *Medical Record*, May 18, 1889.

The author thinks the above question should be answered in the affirmative. He considered the general treatment and hygiene by far the most important part of the treatment and also immobilization of the joint.

PREVENTION OF DIPHTHERIA. Issued by State Board of Health of New York.

THE ETIOLOGY, PATHOLOGY AND TREATMENT OF ACUTE CATARRH OF THE UPPER AIR PASSAGES. By J. G. Carpenter, M.D. Reprint from *The Journal of the American Medical Association*, April 13, 1889.

CONSTITUTIONAL AND LOCAL TREATMENT OF ACUTE CATARRH OF THE UPPER AIR PASSAGES. By J. G. Carpenter, M.D. Reprint from *The Journal of the American Medical Association*, April 20, 1889.

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PHARMACY AND THERAPEUTICS.

THERAPEUTICS OF SULPHUR.—*Physiological Effects.* On the alimentary canal sulphur acts as a stimulant to the normal peristaltic movements, and in moderate doses becomes a laxative. It is probable that the stomach itself is little influenced by the sulphur, as the surface and contents of that organ are usually acid in reaction, and possess no solvent power; but when it arrives at the duodenum, and meets with a different condition of the mucous membrane and the presence of bile and pancreatic fluid, both alkaline in reaction, more or less of it becomes converted into a soluble sulphide, which is absorbed by the portal vessels, and passes first through the liver, and afterward into the general circulation by the hepatic vein. From the blood it afterward becomes eliminated, partly by the skin and partly by various mucous membranes. We have good evidence that it is thrown out by the skin in the fact that silver worn close to the surface becomes blackened to some degree when sulphur is taken continuously, and the odor of sulphuretted hydrogen can occasionally be detected in the breath. The presence of the cream of tartar in the lozenge helps to prevent the formation of any soluble sulphide in the stomach, and hence the absence of sulphurous eructations. Any soluble sulphur, however, which reaches the cecum and colon, where the reaction is again acid, is apt to evolve hydrogen sulphide, and impart odor to the contents of the lower bowel.

Therapeutic Effects on the Alimentary Canal.—As the alimentary canal is influenced partly by the direct action of the sulphur on its mucous membrane, partly by the circulation of the sulphuretted blood through the intestinal capillary system, and partly by the altered and increased flow of bile from the liver, it will be naturally expected that in morbid states of this canal we should be able to detect marked effects from the continued administration of the remedy.

When commencing the use of the small doses of sulphur, I scarcely anticipated that any appreciable laxative effect would be produced by them. In this, however, I was mistaken, and although the word purgative is too strong to be applied to the action of a single lozenge taken at bed-time, still, in the majority of cases, it is sufficient to prevent the necessity of ordinary aperients being administered. In several instances I have known distinct purgative effects produced by the five grains of sulphur given in the form of the lozenge, but this may be looked upon as exceptional.

That the secretion from the liver is increased in cases of sluggish action of that organ is often very noticeable in the altered character of the fæces; many patients have informed me that under the influence of the drug their motions have been brought from a pale clay color to the normal state, and although the action of the sulphur is slow compared with that of mercury, still in chronic torpid conditions of the liver the advantage of the sulphur over the mercurial treatment is undoubted. When we consider that the most important salt of human bile—namely, taurocholate of soda—is a sulphur compound, and one containing a large percentage of that element, it might almost have been anticipated that the administration of sulphur for a long time would produce a marked alteration of the biliary secretion. In the case of sodium, the other ingredient or base, which is united with both the taurocholic and glycocholic acids, we have good evidence that its influence on the secretion of the bile is well marked; hence in hepatic and stomach disturbances we usually select sodium salts in preference to those of potassium or lithium; hence, also, the value of Vichy, Marienbad and Carlsbad waters in the treatment of chronic hepatic diseases.

It is probable that the alimentary canal is more affected by the secondary action of the sulphur upon the intestinal glands than by the direct action of the drugs, and that the increased peristaltic effect is dependent, to a great extent, upon the increased glandular secretion. In hæmorrhoidal conditions not suitable for surgical interference, and in some cases of bleeding from the rectum, I have seen the most marked beneficial effects from the continuous sulphur treatment; the bleeding is often completely stopped, and great relief of all the symptoms obtained, especially the accompanying pruritis.

A horse artillery officer returned from India suffering from hæmorrhoids to an extent which almost incapacitated him from performing his military duties. As it was not practicable for him to have any surgical operation at the time, I suggested he should take a sulphur lozenge each night for some months; he did so, and at the end of four months had recovered so completely as to feel equal to return to India and resume active duties.

Another case recently seen is of some interest. A middle-aged lady gave the following history of her ailment: For many years she had suffered from attacks which were called hepatic colic, and in the intervals of the severe attacks she had constant trouble, evidently connected with the imperfect action of the liver. She had been to Carlsbad and Vichy several times, usually with more or less advantage, but with no approach to a cure. After treating her for the discomfort she was at the time suffering from, I ordered the sulphur lozenge to be taken each night for many months—in fact, till her return to town. I saw no more of her for ten months, and then found that she had persevered with the treatment and had wonderfully improved. The attacks of colic had gradually lessened both in frequency and severity, and were practically removed; and her last visit was more for the purpose of inquiring if she might still continue the use of the lozenge than from need of further treatment.

I have been told by some few patients that they have experienced much relief from the lozenge in regard to a chronic discomfort of the throat (probably pharyngeal), which had either alternated with or accompanied a morbid condition of the rectum. My case-books furnish me with numerous cases in which the long-continued use of small quantities of sulphur has proved of great value in chronic diseased conditions of the alimentary canal, but I think what I have already stated is sufficient to direct the attention of the profession to the subject. Scarcely a day passes in which I am not told by some one or other of the great benefits experienced from the use of the lozenge; and it is not unusual to find that, if prescribed for one member of a family, they are soon taken by several others.

Diseased Conditions of the Pulmonary Passages.—That sulphur, after being absorbed into the blood, acts upon other mucous membranes besides those of the alimentary canal and its appendages is not only probable, but is made evident by the fact that the odor of sulphuretted hydrogen can sometimes be detected in the breath; and experience has shown that certain forms of bronchitis, especially when in aged persons and very chronic in character, are beneficially influenced by the administration of the drug. Formerly a very disagreeable preparation was used for the purpose; it was called the balsam of sulphur, and consisted of sulphur dissolved by the aid of heat in olive oil. Now that the remedy can be so readily given in the form of the lozenge, it might be desirable to make some extended trial of it in these troublesome affections.

The Mucous Membrane of the Urinary Tract.—My experience as yet will not enable me to say much on the value of sulphur in chronic forms of cystitis. In some affections of the kidney it is far from being contra-indicated, as its influence on the skin would tend to relieve any congested state of the renal organs.

Diseases of the Skin and its Appendages.—The popular idea of the value of sulphur in affections of the skin is probably founded on experience, and if any argument is required to add to the probability, it is the fact that when taken for any length of time, even in moderate doses, it is eliminated from the skin in a very appreciable degree. In acne, psorias and prurigo it is useful, either given alone or as an adjunct to other treatment; also in some of the localized forms of eczema, especially those connected with a gouty diathetis, as pruritus ani; is often most useful in allaying the very troublesome itching of that complaint—an effect probably due in part to the action of the sulphur on the skin, and in part also to its action on the hæmorrhoidal vessels. Under the influence of small doses of sulphur, when long continued, the complexion of the patient often improves to a marked degree.

Not long since a lady who has taken the sulphur lozenge for nearly three years told me as a fact, what I little anticipated, that after she had continued the remedy for a short time her finger nails, which had for long been accustomed to split very readily, so as to become very troublesome, ceased to do so; but when she omitted the use of the sulphur the brittleness returned. Again on resuming the use of the lozenge the nails became healthy, and have now remained so for two years.

If the growth of the nail is altered by the exhibition of sulphur, is it not probable that the hair, another cutaneous appendage, may be also influenced by it? It is certainly worth while to watch and see if an effect of any kind is produced on the growth of the hair under these circumstances. At present my experience will not allow me to give any definite answer to the question.

Morbid Conditions of the Muscular System.—From time immemorial sulphur has been employed as a remedy in chronic muscular rheumatism, and among the peasantry it is not uncommon to find that flowers of sulphur suspended in gin are made use of; the spirit may sometimes assist the action of the remedy, and often is an inducement to perseverance in the treatment. It is in such forms of muscular affections which are benefited by guaiacum, serpentary, and such like stimulants, that sulphur is found to be most efficacious. In cramps, so common in gouty subjects, the administration of sulphur is often very valuable, and I find in one of my case-books an entry to the effect that a gouty patient suffering from many of the so-called irregular forms of the disease is, among others, very subject to cramps; but these are quickly relieved and completely kept at bay by taking the sulphur lozenge.

Chronic Articular Diseases.—It was for the treatment of the disease formerly designated by the name of rheumatic gout, but now called rheumatic arthritis, that I first prescribed sulphur in small and continuous doses. At that time I had no idea that it would prove so valuable in morbid states of the alimentary canal, my object being simply to bring the system under the influence of the drug, and thus endeavor to alter the morbid condition of the articular strictures. From my experience I feel convinced that sulphur is useful in some chronic affections of the joints, although as yet I cannot say I have depended altogether on the remedy, but have made it only a part of a therapeutic plan, in which it has been often associated with powerful agents, such as iodine and arsenic. The more chronic the form of the articular disease, the more likely is sulphur to prove beneficial. In true gouty states of the joints, when the disease is both chronic and asthenic, sulphur is often a valuable adjunct to other remedies.

Up to the present time I feel that I cannot speak confidently of the amount of benefit which is derived in chronic articular affections from the influence of the sulphur apart from other remedies. That it is valuable as an adjunct I have no hesitation in asserting, and that it often enables us to avoid the administration of purgative medicines is of itself a great desideratum.

Summary.—(1) The results contained in the present communication were derived from the administration of very small doses of sulphur continued for a lengthened period of time, the doses being much smaller than those hitherto employed, often not exceeding five grains each day, and the time of exhibition much longer, namely, weeks, months, and in some cases years. (2) A lozenge, named the compound sulphur lozenge, containing five grains of sulphur and one of cream of tartar, was usually prescribed, as being very convenient and by no means unpleasant in taste, and it was found that patients could be readily induced to persevere in using them for an almost indefinite time. (3) The physiological effect of these minute doses of sulphur are observed upon the alimentary canal and the organs connected with it; also on the pulmonary mucous membrane and the skin. (4) Sulphur is not an element foreign to the system, as it is contained in the most important proximate principles of the blood and flesh, and likewise of the bile and saliva. (5) Sulphur given in the manner above described is of great value in many morbid states of the alimentary canal and liver, as in cases of hepatic sluggishness, and in piles and hæmorrhoidal hæmorrhage; besides which the continued use of the lozenges is often quite effectual in obviating habitual constipation without producing the unpleasant action often pertaining to ordinary aperient medicine. This beneficial effect on the bowels has doubtless been the chief cause of the lozenge having become so much liked, so continuously persevered in, and so extensively used. (6) Sulphur in small doses is sometimes useful in affections of the pulmonary mucous membranes. (7) Sulphur has long had a reputation, and doubtless is of much value in many diseases of the skin and its appendages. (8) Some arthritic diseases, especially chronic forms of rheumatoid arthritis and gout, and also many cases of muscular rheumatism, are much benefited by the continued use of small doses of sulphur.

In conclusion, it may be mentioned that the use of the compound sulphur lozenge, since first employed (not five years ago), has spread most widely; and I have been informed that one maker of medicinal lozenges has, during the last six months, sent out three hundredweight, which is at the rate of about two hundred and twenty thousand lozenges a year. Without wishing too lay too much stress on the value of the treatment I have been speaking of in the present communication, or of being thought to consider sulphur applicable as a therapeutic agent in more than a limited number of diseases, still of one fact I feel confident: that there are many hundreds at the present time who are indebted for much health and great comfort to the use of this simple and harmless remedy.—*Sir Alfred B. Garrod, London Lancet.*

STROPHANTHUS.—Dujardin-Beaumetz (*Le Progress Medical*) considers strophanthus a good diuretic in heart troubles, and says it may be prescribed to advantage in mitral affections with dilatation. This authority has also had good results with the drug in albuminuric nephritis, but he does not believe in a nephritis due to the ingestion of strophanthus.

Germain Sée looks upon strophanthine as indicated in aortic insufficiency, when the heart lacks compensatory force, and in certain cases of fibrous and fatty degenerations of the cardiac muscle. He considers it well here to alternate the strophanthine with sparteine or convallarin, all of which he thinks can be given alternately for a long period of time. Sée prefers strophanthine, the gluco-side, to strophanthus itself, as being more certain; he prescribes it in doses of from one-twenty-fifth to one-fiftieth of a milligramme. This authority does not think the diuretic action of strophanthus or strophanthine as sufficient to be of much benefit in cardiac dropsy, and in many cases of heart troubles he prefers iodide of potassium, pyridine inhalations, and antipyrine, hypodermatically; the latter being especially useful in those affections accompanied with pain.

AMENORRHŒA (*Med. Rec.*).—For this condition manganese is the remedy that the author has found to give the most satisfactory results. Most of the salts of this drug, however, cause so much gastric irritation that they cannot be used in most cases, but the binoxide seems to be an exception in this respect, Dr. Segur having used it in many cases with the happiest results, and without seeing any disagreeable effects caused by it. A disagreeable feature of this remedy, in Dr. Mundé's experience, though apparently not in the author's, was its unreliability. It might afford relief at one time, and yet at another, even in the same case, and seemingly under the same conditions, it would fail utterly to bring on the menstrual flow. The lactate of manganese is also free from the irritating action upon the stomach that most of the other salts of the drug exert. Manganese has the reputation of being an abortifacient, hence some caution is necessary in its use as an emmenagogue. But the maximum dose employed by the author is six grains a day, and this is far below that which has been used to produce an abortion.

BRONSON'S OINTMENT.—As a valuable remedy in sycosis, acne rosacea and other diseases in which it is desirable to apply mercury for its local effect on tissues, Bronson's ointment has been recommended. It is made as follows:

℞.

Hydrarg. ammoniat, - - - -	℈i
Hydrarg. chlorid, mitis. - - -	℈ij
Vaseline, - - - - -	℥i.

The vaseline may be replaced with lanoline with good effect.

TREATMENT OF SCABIES.—Rub a third of this mixture into the whole surface of the body, from the neck downward, at bedtime:

℞.

Flowers of sulphur, - - - -	ʒij
Beta napthol, - - - -	ʒi
Balsam of Peru, - - - -	aa ℥j.
Vaseline, - - - - -	

—*American Prac. and News.*

NEW ANTIDOTE FOR MORPHINE.—Professor Bokai, of Klausenberg, believes that the best antidote for morphine is picrotoxin. The two substances act in an opposite manner on the respiratory center, morphine paralyzing its action, while small doses of picrotoxin increase it. As in poisoning by morphine death occurs from paralysis of the respiratory center, and as picrotoxin hinders this paralysis, it follows that picrotoxin is likely to be of real use in morphine poisoning. In morphine poisoning, diminution of the blood pressure plays an important part, but picrotoxin enjoys the property of stimulating the vaso-constrictor center of the medulla and thus counteracts the effect of the morphine. Once again, the action of these two substances on the cerebral hemispheres is also of an opposite character. As atropine, the only known antidote of morphine, cannot be administered in large doses, it is certainly desirable that other means of combating morphine poisoning should be sought for. Professor Bokai thinks that picrotoxin may be useful as a substitute for preparations of nux vomica, and he also believes that it will be found of value in preventing chloroform asphyxia.—*Lancet.*

DETECTION OF PUS IN THE URINE.—Drop into the specimen of urine enough tincture of guaiac to give it a milky appearance, and heat it a few minutes to 100° F. If pus is present a blue tint will develop. Otherwise the urine may be passed through a white filter, on which is then allowed to fall a few drops of tincture of guaiac, producing, if pus is present, a distinct blue coloration.—*Pharmaceutical Era.*

TAPE-WORMS IN CHILDREN.—The following prescriptions will, according to the *Lyon Médical*, May 12, 1889, be found most effectual in cases of tapeworm occurring in children. Both are very agreeable to the taste, and are, therefore, easily administered:

I

℞.

Oleorsim of aspidium	ʒj to ʒijss.
Peppermint water	f.℥ss.
Essence of anise	gtts. x.
Chamomile water	f.℥j.
Syrup of sugar	f.ʒv.
Syrup of bitter orange-rind	f.ʒv.

II.

℞.

Oleoresin of aspidium	ʒj.
Calomel	6 grains.
Sugar	ʒij.
Gelatine	q. s.

Make into the consistency of jelly and administer as a confection.

SULPHONAL IN MENTAL DISEASES.—Dr. Liborio Lojacono, assistant in Dr. L. Bianchi's *clinique* for mental diseases at Palmero, has recently reported the results of some experiments which he has made with sulphonal on patients suffering from different forms of insanity. The drug was always exhibited in a single dose in water or syrup, from 1 to 1½ gramme being given to women and lads in the evening, and 2½ grammes in the daytime. In men the evening dose was from 1½ to 2½ grammes. The physiological action of the drug began to show itself in half an hour at night and in an hour during the day. It produced no great effect on the respiration or on the pulse, though there was a considerable increase in the blood pressure. Digestion and temperature unaffected, while neither the sensibility nor the various reflexes were modified in any way. In only one case, a woman suffering from melancholia, to whom large doses (2 to 3 and 4 grammes) were given three days in succession, did any unpleasant after-effects occur; she was troubled with sickness after meals and a feeling of prostration for one day. It was never necessary to increase the dose owing to patients becoming habituated to the drug, nor did it appear to have any cumulative action. The first effect observed was that the patients became quiet, and soon sat down or went to bed; this was shortly followed by sleep, which in the daytime was often light and easily broken, but at night was sound and natural. The effect was found to vary according to the strength of the dose and the time at which it was given. Thus, while 1 or 1½ gramme given during the day produced little effect, the same quantity exhibited at night produced sleep lasting from five to eight hours. Two grammes during the day induced broken sleep for a few hours, but at night made the patient sleep quietly the whole night through, and sometimes even the following night. In some patients suffering from insomnia a single dose of 2½ grammes given at night produced tranquil, refreshing sleep for two, three or more nights running. In no case did the drug fail in its effect, the largest quantity required having been 2½ grammes at night and 4 grammes in the day. In addition to its power of inducing sleep, the drug had a marked effect as a general sedative. In cases of acute maniacal or hysterical delirium and epileptiform convulsions the paroxysms were either prevented or greatly mitigated; in chronic forms of insanity the effect was much less marked.—*British Medical Journal.*

MESSRS. JOHN WYETH & BRO.'S advertisement in this issue is worthy of the careful attention of our patrons. They give a complete list of their compressed hypodermic tablets—embracing in all some seventy-one different agents and combinations—the most complete we have yet seen. In it will be found almost every medicament used in hypodermic practice. This house claims to have been the first to devise this most valuable and convenient form of subcutaneous treatment, and the well known reputation of this house is sufficient guarantee that its claims are reliable.

CORRESPONDENCE.

ONANCOCK, VA, *June* 22, 1889.

Editors of GAILLARD'S MEDICAL JOURNAL:

DEAR SIRS:

The following case may be of interest to your readers. Is it a case of superfœtation?

A woman æt. 24 years, married, mother of four children, the last one born January 16, 1889, in the City of Baltimore, where she has been living for twenty-one years, and being born and raised in this neighborhood up to about twelfth year, is here with her mother. She is a negress, name, Ellen H——. Here are facts given me by her, and what I found in her case for myself:

Confined in the City of Baltimore, Md., and two weeks after child was born, felt a quickening and thought it was the womb, consulted a Doctor who told her "Just as sure as you are born there's another baby there." She not accepting the statement at first, but "ever since" she has felt the motions of the child. (This was the 10th day of June, 4 P.M., that I made this visit, having heard of the rumor, went to her house, and gatherd her history.) The baby seems to be as is stated, she alleging "he'll be five months old 16th of this month—next Sunday." Now for the mother again.

She looks healthy, and in good condition, and near at term, the womb tumor at xiphoid appendix, and motions felt at this visit. (She does not remember the physician consulted, and never has needed the services of an obstetrician.) "Everything went on all right, no difference from any others."

She does not remember anything about her nurses, nor quickening of the last child born, "because I never paid any account." (her suspicions of anything unusual not being aroused.) She says: "I feel the motion of it now. Sometimes I think it is not a baby; but it has all the appearance of it."

The child (the one born) seems as she says, "perfectly hearty" (healthy). Nurses bottle. He is small, however. He is sprightly; bowels are costive, "balls" from milk diet. June 21st, 8.5 P.M., hearing of the birth of the expected child, went to her house, and learned that the baby was born "between one and two o'clock" 20th inst "(yesterday.") Some hæmorrhage; child male, well formed, likely to live, and about a six or seven pounds weight. Mother has some after pains, womb firm, and two and a quarter inches below umbilicus. Some clots passed she thinks, as I grasped the womb. Seeing some bright blood on her sheet, I prescribed Fld. Ext. Ergot. Her pulse is fifty-six. Normal urinization.

I have no reason to think there is any doubt about this child being her own. Her statements seem fair and honest, and being a mother of several children, I can see no earthly reason for her to claim a stranger, and have every reason to think there is no imposition in the case. The family, though colored people, stand fairly well in our town.

The case being a curious one, involving the question of superfœtation, and ovulation, etc., I consider it of sufficient importance to report it, and if deemed necessary, I think I could prove the genuineness of the fourth child, and *I know* she has given birth to this last one. Trusting that this unique case will be of general interest, I am very respectfully yours,

EDGAR W. ROBERTSON, M.D.,

SANITARY.

BEEF-TEA FALLACY.—There is no article of diet for the sick which has been more over-rated than the one designated as above. At least ninety-five out of every hundred of the public, including medical men, believe that beef-tea contains all the nourishment of the beef from which it is made; or at any rate they order it and trust to it as though it did. In many long and wasting diseases in which the battle between life and death depends upon nourishment of the patient we frequently find both patients and attendants depending almost entirely on the watery part of the beef, or on the water in which it has been soaked or boiled. Let any of our readers who wish to ascertain how widespread this belief is ask a hundred or so of their patients, "What do you do with the beef from which beef-tea has been made?" and they will with few exceptions and generally with surprise reply, "Why, throw it out of course!"

The writer well remembers the surprise with which the ladies of the Diet dispensary in this city received his recommendation to make this beef into meat cakes with the addition of potatoes, onions, pepper and salt. The suggestion was accepted, and thus from twenty to fifty pounds of the beefsteak was saved from destruction daily, and a great many hungry families were thereby satisfied. The number of pounds of good meat annually wasted all over the world must number many hundreds of thousands. No one ever thinks of feeding a patient on the water in which eggs have been poached. Yet the difference, in the opinion of those who have studied the subject, is not so very great. In beef-tea you have none of the albumen, none of the fat, and only a little gelatin with a solution of salts. In fact, dogs fed on the strongest beef-tea only die after about the same period of time as those fed on water alone. These last experiments were made so long ago that we forget where they were reported. All that can be said in its favor is that it is a pleasant stimulant, and consequently finds its proper place in acute and depressing cases in which the patient can be trusted to live on his own tissues for a short time. In many cases patients soon tire of it, and can hardly be induced to swallow it, while in others it causes severe diarrhœa. It is impossible, too, that owing to the gelatin, which has been chosen by bacteriologists as the best material with which to make culture fluids, it may favor the progress of such diseases as are characterized by the growth of microbes in the digestive tract. As we stated in a former article on typhoid fever, the temperature seems to range one degree higher when the patients are fed on beef-tea.

Perhaps in most cases it would be better to throw away the beef-tea and give the patient the beef, properly masticated or artificially digested.—*Canada Medical Record.*

THE INFLUENCE OF A BETTER WATER-SUPPLY UPON THE HEALTH OF A COMMUNITY is remarkably illustrated in the experience of the town of Havre de Grace, Md. In times past the only available water-supply was from wells within the town limits, and for many years the town had been notorious for the prevalence of malarial diseases, usually ascribed to the situation of the town on the banks of the Susquehanna River, and to the fact that it lies within a so-called malarial district. In 1883-84 water-works were built and the supply taken from the Susquehanna River, and the use of well-water was abandoned. As an immediate consequence, for which he can in no otherwise account than by the change from well to river-water, Dr. Cochran, the leading physician of Have de Grace, reports that whereas three years ago he usually treated about seventy-five cases of shaking chills daily, he now has scarcely a single case. The town site is certainly the same, and the river, tide-water, and surrounding natural conditions remain unchanged; but the one change is that this town of several thousand inhabitants has suddenly, upon the introduction of a better water-supply, become singularly free from the one special disease which was so lately and for so long a time previously prevalent. Account for it as you please, the results at Havre de Grace are well worth noting by other towns in the United States which now experience what that town did in the past, and by a similar remedy they may meet with similar relief.—*Engineering News.*

WORMS.—By Rev. Jas. Gilmour, M.D., Shanghai, China.

One thing that has amazed me is the extent to which worms are present in the stomach and intestines of the inhabitants of eastern agricultural Mongolia. The Chinese do not use water-closets; pigs act as scavengers, but seem to refuse worms; and a foreigner living among the natives is struck by the quantity of worms passed in the ordinary course of nature.

In beginning practice among this people, I used to be puzzled by men giving descriptions of diseases which I could refer to no class of disease with which I had become familiar in Peking and other parts of North China. The symptoms were at times most complicated and the suffering great. After a while the thing began to dawn upon me that possibly worms might be at the bottom of some of these cases on which the patients had spent much money, taking courses of medicine prescribed by native doctors. A few experiments brought back some of the subjects of these cases open-mouthed with surprise at the quantity of worms discharged, though they had previously assured me there were no worms in the case. Every boy and girl seems to be infested with these parasites. Nearly every woman has from time to time dire attacks of pain brought on from no other cause; and men tell me tales of worms crawling up their throats. Looking around I am amazed to find how extensive is the trade in anthelmintic bonbons. Every grocer's shop seems to have them, and nearly every peddler, selling odds and ends throughout the country, has a bottle or two in his store. Whence comes this universal plague? Is it the same all over China? I have not noticed it so much in the hospitals of Peking and Tientsin—what makes the difference? For other places in China I cannot say, but out here in eastern agricultural Mongolia the style of eating generally lays the inhabitants open to taking into their systems all manner of germs. Dishes and chop-sticks, after being used are put away wet, and not cleaned before being again used. The climate is very dry and windy, and blows about dust continually, except on the very few days when rain falls. Food cooked and eaten warm is all right, and can hardly, between the pot and the bowl, catch germs, but at almost every meal food left over from former meals is also eaten, and this often without being recooked. Dry foods, such as cakes, scones, and bread in its many forms, are allowed to stand about uncovered, ready receptacles for the conveyance of germs to the mouth. In addition there is a form of diet here in summer called *shi fan*, namely, grain boiled, then passed through cold water, set aside and eaten sooner or later as needed. Standing about for half-a-day uncovered, or only partially covered, this one article of diet alone seems sufficient for the conveyance of any quantity of germs to the intestines. Then again, Chinese are hopelessly dirty in their cooking arrangements. In their homes they seem not to know the rudiments of cleanliness, and out-of-door cooking is even worse. At temple fairs, porridges and breads are cooked in uncovered pots, low down near the ground, close to bustling pathways, where the dust of the earth, impregnated with all manner of things, is stirred up by the feet and garments of passers-by, and floated into the pots and cups and on to the cakes of the numerous petty traders. And all this food is eaten down, germs and all! The wonder is not that worms are generated, but that the high mortality of China is not even higher than it is. Fairs and temples usually happen in any one place only once a year, and can hardly account for the sowing of germs in the populace generally; but there is one place where the thing goes on all the year round—the market place of Ch'ao Yang. There is a cheap food market, where things are really cheap, and there the cooking is done low down near the ground on the side of a bustling street, hardly ever free from dust, and that dust contains elements contributed from all manner of things, sewage included. Yet the food looks all right, tastes good, and is sold and eaten in large quantities, the customers being to a great extent countrymen come to the town to trade. From this as a centre it would be difficult to say to what extent disease is sown broadcast over the surrounding country. Perhaps, though, *the* most prolific source of germs is to be found in the quantities of onions, turnips, carrots, vegetables generally, melons, and fruit eaten raw. Little or no care is taken to wash or wipe many of these fruits and vegetables, and pears especially, which abound here, have a kind of sticky exudation which seems peculiarly fitted to catch and retain any minute particles which may come near. Washing of roots even when done is not done well, the natives seeming to have an idea that it is healthy to take a little earth in with the root. When such things are borne in mind it seems less wonderful that people here are troubled with internal parasites.—*China Med. and Mis. Journal.*

OBITUARY.

MRS. ELLEN GIBSON.

GIBSON.—Died, July 8th, 1889, in New York, at the residence of her daughter, Mrs. M. E. Gaillard, Mrs. Ellen Gibson, widow of Dr. Charles Bell Gibson, of Richmond, Va.

MISCELLANEOUS.

THE philosophy of pessimism, associated with the names of Schopenhauer, Hartmann, and Leopardi, owes its influence in no small degree to the depressing reflections which a resolute contemplation of the vast amount of suffering and sorrow in the world is apt to excite in some minds. The universality of suffering and disappointment; the wide prevalence of disease; the ubiquity of pain; the frustration of effort; the general admission that the present is unsatisfying, and that only the hope of a better future for the individual and the race keeps energy alive; the confession that "man never is, but always to be blest," such reflections suggest a basis for pessimism, and explain, if they cannot justify, its hold over many minds of a superior order. But, happily, the pessimistic logic contains one rather obvious fallacy, which robs it of much of its cogency. It accentuates evil and suffering, but omits to take account of the benefits to humanity of which they are indirectly the source and the occasion. The more we reflect upon the subject, the more convinced shall we be that pure, unmixed, irredeemable evil hardly exists, and that some compensation can be found or created in connection with the direst calamity. The hurricane seems the embodiment of destructive and maleficent activity; but if in its train are found ruin and death, there also may we discover a purified atmosphere, the arrest of disease, and the descent of fertilising rain. When cholera sweeps over wide regions with its pestilential breath the scene is one of destruction, death, despair: but how great the benefit to unborn generations if such a calamity tends to the more careful study and more systematic application of the laws of hygiene. Pain itself, the most universal of evils, has a side the contemplation of which lends no countenance to pessimism. On this side we shall look for a moment or two.

In the first place, pain obviously plays a great part in the preservation of life. If fire did not cause pain in burning, if the knife could pierce the flesh without suffering, if the noisome gas caused no inconvenience to sense or brain, it is difficult to see how, with our present organization, life could be long preserved. We should be constantly courting death and should remain in ignorance of danger until the mischief effected was irremediable. The child who burns its hand, or cuts its finger, or knocks its head against a table, or swallows some noxious mess, suffers indeed, but from another point of view may be more truly said to be learning invaluable lessons of self-preservation. Probably this, although a painful way, is the only one in which such knowledge could be acquired. In spite of the fact that experience is such a stern instructor and punishes so promptly, it is one of the most common of commonplaces that we are slow to profit by its admonitions and only learn wisdom after repeated warnings.

The pain that follows a breach of Nature's laws may not always follow so quickly upon error as in the cases just cited, but not the less is it salutary. The malaise that follows excessive intellectual effort or a drunken debauch is Nature's admonition that her rule cannot be set at defiance with impunity. The persistence in any course of life, any habit, diet, or occupation inimical to health, is always attended by warnings—at first few and faint, but by degrees more frequent and peremptory—that Nature is being outraged, and that her vengeance will not tarry long. Such warnings are painful, but plainly they tend to the good of the individual and the preservation of the race.

The uses of pain are, however, by no means wholly, perhaps not even chiefly, physical. Pain is the great teacher, the great agent in the development of character. It may be doubted whether any of the nobler virtues, self-sacrifice, self-knowledge, courage, patience, tolerance, ever have been, or ever can be, fully developed without the agency of pain. It is those who have suffered who are strong. It is he who has borne pain in his own person who best knows how to relieve, or to sympathize with, the suffering of others. Thus the pain of the individual becomes the fountain of help and consolation to the species. The sorrow of one becomes transmuted into the joy of many.

There are also benefits arising from pain which are reflex or vicarious in character. It not only strengthens and purifies the sufferer, but it develops the helpfulness and sympathy of these upon whom he is dependent. Oliver Wendell Holmes beautifully remarks that the long, anxious, arduous tendence upon a sick friend whitens the hair, but also whitens the soul. There is consolation in the reflection that if sickness and suffering increase the cares and responsibilities of others, there may arise compensation where it is least looked for. It is one of the most pleasing traits of human nature that we seem naturally to be most bound to those for whom we have suffered most. The mother loves her child not less but more because she suffered in bringing it into the world, and because her only anxiety on its behalf partakes often of the nature of pain.

No careful thinker will pretend that the above considerations fully explain "the mystery of pain." It remains a mystery in some respects still; but such reflections tend to lighten its darkness, and to suggest that in ways not yet evident the sorrow and suffering of the world may be working out the world's regeneration.—*Lancet.*

CHRONIC TREATMENT OF ENDOMETRITIS (Alex Duke, M.D., in *Brit. Med. Jour.*). In this tedious and troublesome complaint the endometrium degenerates into a pyogenic membrane and the uterine cavity becomes converted into a chronic abscess. Acting on this view, I have for some time past treated all cases in which I find the characteristic muco-purulent discharge existing by rapid dilatation, cleansing of the uterine cavity by the curette, and the insertion *directly afterwards* of one of my spiral wire stems, which, by keeping the cervical canal patulous, straightening the uterus, and permitting free drainage, I have found to yield excellent results. The stems I have last designed (made by Messrs. Arnold & Sons, London) I find can be worn without inconvenience by the patient without being confined to bed if the proper sized stem be chosen, as I have now added a flat disc of wire at the base of the stem which makes it self-retaining, and I have been much pleased by the relief afforded to some patients with whom every other means had been previously tried except the flexible stem.

The conclusion I have come to is that, unless free exit is given for the secretions, the smallest quantity being allowed to remain *in utero* keeps up the unhealthy condition of the endometrium, just as a similar secretion allowed to remain long enough in the bladder will thwart all our efforts to keep that organ aseptic.

I find that a great number of the reflex symptoms complained of by patients suffering from chronic endometritis vanish for good and all when the treatment I have described is adopted, and I hope that others with larger opportunities than I possess will give the stem a trial. There can be no difficulty in removing it even if worn for a considerable time, as traction on the lowest strand of wire will remove the whole with ease, as the wire of which the wire is composed of is slight, and will unwind from below with the certainty of doing no damage to the cervical canal.

Greenhalgh's stems have the disadvantage of not being self-retaining, unless the patient is kept in the recumbent position, and also being composed of rubber got rapidly fœtid, even in cases where the syringe was daily used. I have the greatest objection to rubber pessaries of all kinds, as they never keep clean, always have a bad odor when removed, and are not lasting, besides being as a rule expensive. I think my stems on trial will be found to supply a want, being light, cheap, lasting and clean, and I venture to say an improvement on any other stem pessary I have seen.

IN view of the fact that so many Americans are in Paris this summer the following facts regarding the water supply there become of great interest.

A greater danger to visitors to Paris than that arising from the defects already mentioned is due to the insufficiency of the water-supply. Paris is in a most unfortunate position. It cannot be said that the water-supply is bad. On the contrary, at immense cost, Paris has secured one of the best water-supplies enjoyed in any town of Europe. According to the last report Paris was receiving 121,000 cubic metres of the Vannes water, 21,000 cubic metres derived from the Dhuis, and from the St. Maur springs 5000 cubic metres—in all, 147,000 cubic metres of pure and excellent spring water. This, however, is not enough. The daily consumption is estimated at 158,000 cubic metres. The deficiency is not very great; still it is enough to compromise the whole town; for when the store of good water is exhausted the Seine water is provided and this through the same channels and without warning. Thus, though a person may, as a rule, drink wholesome water, he will receive for a week or so during the course of the year water taken from the Seine, which is very likely to be contaminated. Again, a person may drink a glass of water in one quarter of Paris which is perfectly pure, while in another district he may, on the same day, get water that is certainly not free from the occasional presence of injurious organic matter. At the present moment the supply of spring water having reached a low ebb, the Seine water is turned on in the ninth, thirteenth, fourteenth, and fifteenth arrondissements. For twenty days these unfortunate districts are to receive only the Seine water; then the first, second, and tenth arrondissements are to be served in the same way. In the pavilion of the Prefecture of the Seine, situated in the central court or garden of the Exhibition, will be seen three glass tanks of water side by side. One receives the water of the Ourcq canal, another of the Seine, and the third of the Vannes. The first two are more or less opaque, are of a green-yellowish tint, and vary more or less in aspect from day to day. But that which contains the water of the Vannes is always perfectly transparent and never changes. Members of the Municipal Council have urged, so far in vain, that the water-supply should be increased. There are numerous projects, and recently a resolution was passed by the Council calling upon the Legislative Chambers to discuss at once the scheme for bringing the waters of the Avre to Paris. How far this question of urgent and practical utility will be preferred to matters of a more political character, cannot yet be determined. It is, however, certain that the water-supply cannot be increased in time to benefit the visitors to the Exhibition. Therefore, proper precautions must be taken. Small portable filters should form part of the indispensable articles to be brought over with the ordinary and personal luggage. Before drinking water that has not been boiled or satisfactorily filtered, careful inquiries should be made as to whether or not the district is supplied from the Seine. That the Seine water may be dangerous will be obvious to all who are acquainted with the neighborhood of Paris. The intake for the supply is of course outside the town, and some little distance up the stream, but it is unpleasantly near the large manufacturies of *poudrette*,, or human guano. Also there are boats containing tanks which are filled with the contents of cesspools, and the manure is thus conveyed up the river to the works. A few years ago some scavengers, in their impatience to finish their day's toil, instead of conveying all the soil the barges contained to the works, simply threw a considerable portion into the river. Fortunately this was discovered, and now there is a service of inspection organized both day and night, and careful watch is kept that these tank barges should not again contaminate the water. But there are other causes of pollution, and it is an undeniable fact that many outbreaks of typhoid fever in Paris have occurred about a fortnight after the substitution of Seine water for the usual and pure supply of water from the Vannes or the Dhuis. The question of water supply is therefore a very serious problem which the French authorities should lose no time in settling, and it would be well if the pressure of public opinion could be brought to bear so as to hasten its solution—*Correspondent of the Lancet.*

MEDICAL NEWS AND NOTES.

THE SUPERINTENDENTS OF THE INSANE.—The following officers of the Association of Medical Superintendents of American Institutions for the Insane were elected at the recent meeting at Newport: President, Dr. W. W. Godding, of Washington, D. C.; Vice-President, Dr. Henry P. Stearns, of Hartford, Conn.; Secretary and Treasurer, Dr. John Curwen, of Warren, Pa.

THEODOR SCHWANN.—A memorial tablet has lately been affixed to the house at Neuss, in Rhenish Prussia, in which Theodor Schwann, the originator of the cell theory, was born. His father was a bookseller there, and a devout Roman Catholic. The naturalist himself was also characterized by religious zeal. Before publishing his epoch-making work on the cell, he wrote to the Archbishop of Malines, to whose diocese his native place belonged, stating his new theory, and begging his opinion whether it was at variance with the doctrines of the Catholic Church. The prelate found nothing heretical in it. It was published in Berlin in 1839, under the title, "Microscopic Investigations regarding the Harmony in the Structure and Growth of Animals and Plants." Schwann was at that time assistant in the Berlin Anatomical Museum.

DR. THOMAS S. LATIMER has been elected to the Chair of Principles and Practice of Medicine in the College of Physicians and Surgeons, Baltimore. In order to take this important professorship he resigned his position, Chair of Physiology and Diseases of Children, in which he has successfully taught for many years.

DYSMENORRHŒA.—Dr. John Shaw, in *London Lancet*, prescribes a mixture of equal parts of belladonna and hyoscyamus for the relief of dysmenorrhœa. It is particularly in the so-called neuralgic or spasmodic form of the affection that this combination seems to afford the greatest amount of relief.

THE TESTICLE AS A REJUVENATOR.—Twenty years ago, at least, Dr. Brown Séquard exhibited tendencies toward a belief that the testicle might be of value for other purposes than the impregnation of the ovum, provided it was taken when young; that it was competent, when its vital principles were properly injected for the respective purposes, not only to call into existence the very young but to rejuvenate the aged.

It seems that this idea has continued to germinate in the brain of the learned, but eccentric physiologist all these years. In 1875 he made experiments with grafts of testicular tissue upon dogs, and to his delight succeeded, as he thought, in renewing the youth of one wretched old cur. Since then he has continued these strange investigations at various times, and during the month of June this year made two separate communications to the Société de Biologie of Paris upon this subject, describing the methods used and the supposed results. He, apparently, thinks he has discovered a sort of *elixir vitæ*, or fountain of perpetual youth, of simpler composition than those elixirs so sedulously compounded by the mediæval philosophers, and easier of access than the elusive fountain which enticed poor Ponce de Leon to his fond and fatal journey.

According to the reports of Brown-Séquard's communications, given by the French journals, he has been experimenting with a fluid obtained by crushing and washing the testicles of young animals, which was mixed with blood from the spermatic veins and water. This fluid he injected into his own subcutaneous cellular tissue almost every day for two weeks, with results so gratifying that he hastened to communicate them to his biological confrères. Notwithstanding his ripe age, between seventy and eighty years, he experienced a rejuvenescence of all his forces, physical and mental. The former healthy and vigorous contractility of the intestines and bladder had returned, as also had his general muscular strength. Intellectual labor had again become easy to him.

Dr. Séquard's scientific acquirements and laborious investigations should entitle him to respectful attention from the profession, even though his astonishing theory be but the outcome of an over-taxed brain and advanced age. He is still entitled to the courtesy which all should accord to honest workers, even when their mistakes are ludicrous.

THE Faculty of the College of Physicians and Surgeons of Baltimore held a meeting last week to fill the vacancies created by the deaths of Professors John S. Lynch and Oscar J. Coskery and the retirement of Professor A. B: Arnold, who has removed to San Francisco. Professor Thos. S. Latimer was transferred to the chair of principles and practice of medicine and clinical medicine; Prof. Chas.

F. Bevan to the chair of principles and practice of surgery and clinical surgery; Prof. J. W. Chambers to the chair of operative and clinical surgery, and Prof. George H. Robé to the chair of obstetrics and hygiene. Prof. Thos. Opie will continue as professor of diseases of women and dean of the faculty. To fill vacancies created by these transfers new professors were elected as follows: Prof. Henry Sewall, of the University of Michigan, to the professorship of physiology; Dr. George J. Preston to the professorship of anatomy, with the diseases of the nervous system as a clinical branch of instruction. Dr. N. G. Keirle was elected as lecturer on legal medicine, in addition to his demonstrations in pathology; Dr. George Thomas as lecturer on diseases of the throat and chest; Dr. G. A. Liebig, Jr., of Johns Hopkins University, lecturer on medical electricity, and Dr. J. H. Branham, demonstrator of anatomy. Drs. L. F. Ankrim, Frank C. Bressler and F. G. Moyer were appointed assistant demonstrators, and Dr. R. G. Davis, prosector of anatomy. Prof. Sewall, who comes here from the University of Michigan, is an old Baltimorean, and was for several years demonstrator of biology in Johns Hopkins University. All the other appointees are residents of this city. As an evidence of esteem on the part of his colleagues, Prof. Arnold was elected emeritus professor of clinical medicine on his retirement.

SYSTEMATIC CHEST EXERCISE.—Dr. H. L. Taylor, in a paper before the New York Academy of Medicine, urged the importance of systematic passive respiratory movements to heighten the nutrition of the lungs and to aid in their development. The success attained from the inhalation of certain gases was due chiefly to the respiratory exercise involved. Patients with flat, narrow chests and hereditary tendencies to lung disease should daily practice enforced respiratory exercise. The chest should be slowly and fully inflated, yet without undue straining, and then slowly emptied. This process may be repeated for five minutes twice or three times daily. By daily continuing this exercise the centres connected with respiration will be educated rather than stimulated into activity, and the main vital processes be carried on in a more efficient way.

THE Seventh Special Meeting of the Fifth District Branch of the New York State Medical Association will be held in Port Jervis (Orange Co.), N. Y., on *Tuesday, August* 27, 1889. For those who are willing to spare the time after the meeting, a beautiful and interesting carriage drive of seven miles along the Delaware River to Milford, Pa., is promised. All are urged to make an effort to attend this meeting, as the following Committee of Arrangements are making every preparation to insure an interesting meeting, both scientifically and socially: Dr. J. H. Hunt, of Orange Co., Chairman; Drs. W. B. Eager, Orange Co.; M. C. Conner, Orange Co.; T. W. Bennett, Sullivan Co.; W. H. DeKay, Sullivan Co.; J. A. Munson, Sullivan Co. W. T. Lusk, M.D., President. E. H. Squibb, M.D., Secretary, P. O. Box 94, Brooklyn.

THE BIRTH OF MAN.—The ethical question, how far it is pusillanimous and even religious to profit by the annihilation of pain which anæsthesia affords under surgical operation and in parturition, has recently undergone discussion anew in some of the French papers. The discussion is antiquated and out of date in this country, and many of the stories told would hardly bear repetition in this serious country. Sir James Simpson long ago disposed of the argument, now revivified, which charges the women who accept anæsthesia in childbirth with evading the Biblical injunction of pain. An indignant Frenchwoman, has revived an old argument with some flippancy, but not without a reckless wit. "You quote," she says, "some verselets in the Bible against us, but let me remind you that the only one of your sex who took his part in the act of giving birth profited by anæsthesia; for when Adam gave up a rib toward the creation of Eve he was thrown into the deep sleep of insensibility."—*British Medical Journal.*

OUT of the 400 or 500 cases of typhoid fever in Philadelphia, a large part of them are in the Kensington district. Nineteen new cases in this district has led the Board of Health to urge the City Council to discontinue the pumping station at Otis Street wharf, Delaware River. Since the recent resumption of these works there has been a 25 per cent. increase in the death rate.

THE Paris correspondent of the London *Lancet* is eloquently indignant over the bad odors, the scarcity of water, the insufficient provision for public conveyance, and the effrontery of medical charlatans in Paris. The moral most strongly impressed by his report is that people who do not know how to take care of themselves should not stroll over to Paris for pleasure at this particular time.

INTUBATION.—Dr. G. O. Williams (in the *Med. Press and Circular*) narrates a case in which the difficulty due to tumefaction of the tonsils and uvula, and consequent obstruction of the faucial outlet, was successfully overcome by a method capable of ready imitation. The patient was a boy æt. 11 years, who had been ill forty hours, and whose fauces and left palate were covered with exudation, the throat was obstructed, respiration very labored, and slow suffocation progressing. At this stage a soft rubber tube, seven-eighths of an inch in external diameter, was introduced past the seat of obstruction to just within the larynx, and immediate relief to breathing was obtained. With occasional removals for cleansing, nutrition and medication, its use was maintained during seventy hours, at the end of which time the subsidence of tumefaction was so advanced as to permit its removal, and complete recovery ensued.

AS CORYZA is so much more disagreeable in hot weather than at any other time, we are glad to see a suggestion which may be useful to those who are suffering from it. The following is taken from a

Swiss pharmaceutical journal, and certainly has the merit of simplicity: A jug is half filled with boiling water, into which a teaspoonful of well-powdered camphor is thrown. A funnel-shaped paper cap is then placed on top of the jug, and a hole torn in it just fitting the nose, The camphorated steam is inhaled through the nose for ten or fifteen minutes, the inhalation being repeated, if required, every four or five hours. If the patient resolutely persists with the inhalation, in spite of its unpleasantness, it is said that three repetitions will always effect a cure, however severe the coryza may be.

MILWAUKEE physicians are said to have formed a sort of league, which at present is engaged in midnight practice in a public square, learning to ride the bicycle, which instrument it is proposed to employ in making night visits.

DR. P. GOURDIN DE SAUSSURE, of Charleston, S. C., reports that while examining, microscopically, a specimen of fluid drawn from a tumor of the left testicle of a white man, æt. 37 years, he discovered a spermatozoon with a double head, and asks if any such have been found before. He reports; Have made many observations of the seminal fluid of dogs and cats and some few on that of man before, but never before has he observed a double headed spermatozoon; and he asks if in this double headed condition we may not have a solution of one of the causes of twin pregnancies.

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EDITORIALS.

RETRO-UTERINE OR PELVIC HÆMATOCELE.—In the whole compass of medical science no subject can be mentioned which has been so misunderstood, so falsely, ignorantly interpreted, as *retro-uterine hæmatocele.* Recent contributions to this theme have only served to justify the correctness of this statement. And yet there is no necessity for the confusion which here prevails. With the light thrown upon this morbid condition by pathological anatomy, and with the aid of a careful analysis of the clinical phenomena, it is not difficult to gain a clear comprehension of what it is and how it originates. Owing to the limited space at our command and the extensive field which a thorough discussion of this subject would cover, our remarks must be confined chiefly to the anatomy and genesis of hæmatocele. *Retro-uterine hæmatocele* forms almost invariably a tumor situated in Douglas' cul-de-sac, and segregated from the general abdominal cavity. We say advisedly *almost* always, because under a rare combination of circumstances an *ante-uterine hæmatocele may* originate. As a necessary antecedent to the formation of the tumor there must exist a closed cavity, shut off from the remainder of the abdominal cavity, since free effusions of blood into the general cavity can never, by any possibility of circumstances, evoke the symptoms characteristic of hæmatocele. These effusions, obeying the laws of gravitation, will find their way to the most dependent part of the abdominal cavity, and may become encysted by inflammatory new formation, but *never* do they form a tense tumor, displacing the uterus forward, as we observe in hæmatocele. The tumor characteristic of hæmatocele may originate in two ways. In the first and most common way the pouch of Douglas is roofed over above by pseudo-membranes, the result of perimetritis before the advent of the hæmorrhage, the walls of the cavity thus formed lying in contact. If now an extravasation of blood ensues below the point at which the cavity is bridged over above, its walls must be distended, and the consequence must be the formation of a tense tumor, displacing the uterus forward, pressing the *fornix vaginæ* downward, and encroaching to a greater or less degree upon the rectum. Secondly, retro-uterine hæmatocele may form when there was no segregation of the cavity of Douglas at the time of the occurrence of the hæmorrhage—under certain conditions. That is, when the hæmorrhage is from a point below the fundus of the uterus, and when it either slowly persists or else recurs. Under these circumstances the extravasated blood may exercise such an irritation on the peritoneum as to cause it to be encysted; if then the hæmorrhage persists or if it recurs, it no longer is poured into the free abdominal cavity, but takes place in a closed space, supposing the bleeding point to be below the roof above. The same relations obtain now as in primary closure of Douglas' pouch. We are shut up to the view just advocated by the following facts, which seem to us to allow no other alternative.

In the first place, we never have a firm, elastic retro-uterine tumor, displacing the uterus and perceptible from the vagina, in those instances in which free effusions take place into the abdominal cavity, no matter whether these effusions are *blood*, *dropsical accumulations* or *exudations* resulting from partial peritonitis. In cases of ovarian cystic tumor complicated by ascites, such a retro-uterine tumor is never observed, although *here* the intra-abdominal pressure must be greatly augmented. *Secondly*, the clinical phenomena characteristic of a case of hæmatocele clearly indicate the existence of a hæmorrhage in the true pelvis, which finds obstacles to its expansion in the direction of the general peritoneal cavity. Hence the very decided pressure on neighboring parts, which causes a large portion of the symptoms observed. As Klebs remarks in his most excellent work on pathological anatomy: "That this segregation of the space in which the blood effusion takes place must have existed already before, and have been determined by firm masses of tissue, seems to me to result as a simple and necessary consequence from the group of symptoms before noticed." *Thirdly*, the result of *post mortem* investigations, properly conducted, invariably shows that the accumulation of blood has taken place into Douglas' cul-de-sac, which has been closed above in consequence of a preceding *partial adhesive peritonitis*. So, in the rare case in which an ante-uterine hæmatocele is developed, the vesico-uterine pouch is similarly bridged over *primarily*. *Finally*, it will be observed that almost all the women, who are the subjects of hæmatocele had previously suffered from puerperal diseases and, especially, that peremetritis had existed at some former period of their lives. In at least three instances we were enabled to diagnosticate positively the existence of adhesions between the uterus and rectum, the remains of previous partial peritonitis, in the subjects of which hæmatocele was subsequently developed. In regard to the source of the blood we must look to the organs of the pelvis. The two most common causes giving rise to hæmatocele are: 1, the bursting of a tube—the seat of tubal pregnancy—and, 2, *pelvi-peritonitis hæmorrhagica*. In the case of tubal pregnancy, the preceding perimetritis has enclosed Douglas' pouch, and hence the explanation of the formation of hæmatocele when rupture of the sac takes place is not difficult. A typical case of retro-uterine hæmatocele is evoked under these conditions. Virchow, as is well known, regarded *pelvi-peritonitis hæmorrhagica* as a potent factor in the production of the greater number of hæmatoceles. The experience of other competent observers have confirmed the correctness of the views of the great pathologist. The other sources for the origin of the blood, the *ovaries* and *broad ligaments* sink into insignificance in comparison with the two just mentioned. One source of hæmorrhage regarded by many authors as the most common cause of hæmatocele must be alluded to. According to this view the oviducts may serve as the source of the hæmorrhage by allowing the blood to regurgitate through them into the abdominal cavity, under any of the conditions which cause a *retentio mensium*, the chief of these being obstructions of the vulvo-uterine canal, and excessive accumulations of blood in the uterus and tubes. This process, maintained by Voisin, and invoked by Bernutz and Goupil as a potent causal factor, and which the observations of Olshausen, Krièger, Barnes and others, as they thought, tended to confirm, must, however, be regarded as very improbable. M. Puech pointed out the fact that under conditions the most favorable for such regurgitation, it was excessively rare. The bleeding is too slight to give rise to the formation of a hæmatocele, in these circumstances.

A Substitute for both Burial and Cremation.—In an illustrated lecture, delivered in the past month, the Rev. Charles R. Treat, of this city, proposed and described a mausoleum for the disposition of the dead. The lecturer reviewed the construction of mausoleums from the days of king Mausolus to the present and showed that while these structures were gratifying to the relatives of the dead they stood as an eternal source of disease and infection to the surrounding people. Moreover, in the past it had always required wealth and power to construct one of these costly tombs, and this form of burial therefore throughout the ages had been restricted to the few. The plan proposed by himself would permit of the disposition of the dead of all conditions of life, with all the advantages of the ancient mausoleum, and more, too, both for the dead and the living. It is proposed to construct the edifices by sinking to the depth of one hundred feet a building with a facing of about three hundred. The entire building is to be constructed of concrete, granite, glass and iron. The qualities of concrete to resist the corroding action of time and the elements are well known. And not only to these destroyers is it impregnable, but by virtue of the cystallization which takes place when it is poured hot into moulds, it exhibits nowhere a joint, and would be beyond a doubt more resistant to the shocks of earthquake than any other known compound. This vast house of the dead is to be divided into shelves or rooms. A number of compartments can be arranged together for families. Each compartment contains a window through which the body can be shoved. A thick window pane can be let down in grooves, and can then be hermetically sealed with concrete. There are to be two air pipes. These pipes are each to communicate with a furnace below. The process by which the body is to be preserved is, of course, desiccation. A moderately hot stream of air is permitted to pass upward into the death chamber as soon as a body is closed in; the body is thus robbed of its water and all evaporative constituents, which pass by the out-current down again to the furnace and are drawn through the fire. When desiccation has become complete, presumably, the air currents are shut off, and the dead are left robbed of that all-necessary condition for putrefaction—moisture.

The advantages of this system for the disposition of the dead, if it be practicable, are so manifold, that mere suggestion would seem to bring conviction to the mind of everyone.

In the conclusive language of the Rev. Mr. Treat:

"It costs less, considering what is obtained; it works no harm to the living, either in the air, the earth, or the water; it does not disturb any sentimental or religious habits of thought or tradition; it puts grave robbery and premature interment in the category of the impossible; it does not store up the germs of disease against congenial circumstances which will enable them to again scourge the human race; it enables bereaved friends to know that the remains of loved ones are receiving the tenderest care that the skill of man can devise —a roof protecting them from storms, warmth, light and security incompassing them, while worms, corruption, and the cold damp are forever divorced from their sweet sleep and calm rest.

True, according to the Latin, times change and we change with them, but in some strange way we seem to come back to what has gone before. The ideas contained in the above proposition have their birth unquestionably in the Egyptian method of preserving the dead, save only that it is proposed to retain the viscera.

The proposition should receive the earnest attention of the civilized world. But what changes would it work! Time will be necessary to induce man to lay aside the traditions of the graveyard and the grassy mound raised to show the last sleeping place of his loved ones. Yet this is the age of reason and utility, and the good of the human race should outweigh the cravings of sentiment. Every graveyard is a menace to the community. How often does man, led on by sweet sentiment, seek the loveliest spot, raised above a city's din and turmoil, for laying the dead to rest; and yet, how irrational! Better let it be in the damp, sodden turf of a valley, from which no foulness will be drained to sicken those who are living. To those who are possessed with the morbid distaste of rotting in the earth, this proposition will bring sweet comfort. For our part, we had as lief be food for worms, as all our forefathers were, as be reduced to a handful of ashes kept in a golden vase, that might be scattered to the four winds of heaven by an untimely sneeze! And we must confess, too, that the idea of being slowly baked is as little to our taste as that of incineration. Cremation has already found many advocates, and already crematories in numerous places are sending up to heaven the smokes of their human holocaust.

Will desiccation supplant burial and incineration? Maybe two hundred years from now lovers will no longer walk among the crumbling mounds of the city of the dead and pledge their hearts for eternity (?), and patriots no longer swear by the green graves of their sires to protect their native land.

Think of the advantages of such an institution from an historical standpoint! Records could be preserved for all time, nor need any man find a nameless grave. But think of the emotions which would be raised by annual visits to the sepulchre, and by gazing through a glass window on the calm face of our dead!

The ideas roused by these suggestions are manifold and various, but in the name of humanity and common sense, let no Bible-saturated fanatic come forward with the objection that such is contrary to God's decree, that dust shall unto dust return, even as there are a few who withhold from woman in the pangs of child-birth the priceless boon of chloroform, because God said that in sorrow should she bring forth children.

Comment on this subject is peculiarly demanded of the medical profession. The ideas advanced by the Rev. Mr. Treat are sensible and humane, and it is earnestly to be hoped that they will be widely disseminated and thoroughly discussed.

RESUSCITARE VITAM DULCE EST.—We have not the good fortune to be acquainted with any medical school that contains in the catalogue of its lectures, theoretical or practical, space devoted to teaching the methods of resuscitation in cases of apparent drowning. The importance of knowing well the best methods of artificial resuscitation in the coma preceding death by drowning, cannot be fully appreciated till one has had the misfortune to be thrown into the presence of such a case, and has been forced to stand ignorantly by and see those who are not expected to know and those who are, extinguishing by rough and injudicious handling a spark of life that might be fanned into flame by judicious and intelligent coaxing. It is to our esteemed contemporary from across the water, the *London Hospital Gazette*, that we are indebted for the occasion of our editorial comments on this subject. Perhaps many lecturers on surgery, in passing refer casually to the Marshall-Hall method of inducing artificial respiration, but we venture to say that no student sees even this method of resuscitation put into practice, till some house physician in a hospital instructs him roughly in recalling to life some luckless patient who has succumbed to too much ether. Even then how often do we see the patient punched and squeezed till his ribs well nigh crack, instead of the slow and rythmical movements of the arms being practiced as are prescribed by this method? And yet the Marshall-Hall method alone will not resuscitate a man in the coma of drowning.

Fortunately and unfortunately it rarely happens that a medical man is present under such circumstances. Those who endeavor to resuscitate the comatose man are usually his associates. The first idea that suggests itself, to the frightened companions or onlookers, is to "roll him on a barrel." The unfortunate one is resuscitated despite the barrel, or this having failed, whiskey is administered or he is laid out on the bank and stared at by the crowd till the knowing coroner feels his pulse and listens over his heart, and, perceiving no evidence of life by these means, pronounces him dead by drowning. The men employed in the life-saving stations that are scattered along our stormy sea-coasts by the provident care of our Senate, are instructed practically in all the known methods of resuscitating life, and regular instructions in writing are printed and pasted aboard many vessels.

But by the oversight of our professors it remains for the medical man to be well nigh as ignorant in these matters as the populace. The great difficulty exists in these cases to say when efforts are unnecessary, or how long they should be persisted in when employed, and this brings forward the question of the absolute signs of death. Any man who has looked on the cold and rigid face of death imagines that he knows a dead man when he sees one. Attendant circumstances are often of advantage in assisting us to decide the question. Nevertheless, almost anyone, save a very youthful and learned physician, is willing to admit that the only sign of *dead* certainty is the sign of decomposition. In the death by drowning the difficulty is greatly enhanced by numerous conditions, and to our mind there is little doubt that many a man comatose from immersion in water has been allowed to pass into eternity from ignorance and carelessness. Much ignorance exists in the profession as to the signs of death from drowning, and as to the means of resuscitation in the coma of drowning.

Let our profession be at least as well instructed in the methods of resuscitation as the men on the life-saving stations. It seems to us that the future of this matter lies with the medical schools.

THE AMERICAN MEDICAL ASSOCIATION.—The fortieth meeting of this great body, although not as fully attended as some of the meetings have been, was in many respects successful and interesting. Dr. Dawson's address was well received and all acknowledged that he acquitted himself very handsomely in his trying rôle. The keynote of his address was his manly vindication of American medicine in all of its branches and institutions. No fulsome flattery was expressed, but he so portrayed his subject as to leave his audience with an increased respect for the profession of medicine in America, a greater confidence in her colleges, a higher esteem for her medical journals and a more serious conviction that the only aims worth striving for are the highest and that the American physician is constantly proving himself capable of attaining these in every branch of science.

Dr. P. S. Conner's address on surgery was a fine and thoughtful résumé of work recently accomplished in that field. He dwelt at some length upon cancer—its pathological conditions and the varied opinions as to its treatment. While dwelling earnestly upon the necessity for the early use of the knife, he forecasts a future when perhaps much will be discovered in regard to the non-operative treatment—drugs, electricity and inoculation may even yet have an important bearing upon this obscure pathological condition.

The address on medicine by Dr. Wm. Pepper was a disappointment to many, for it was virtually an appeal to the sympathies of the Association on behalf of the fund for the desired monument to Benjamin Rush. Two hundred aud sixty-four dollars was subscribed by the members, but it was quite evident that many present believed that "he who deserves a monument needs none."

Several important reports from section committees were handed in. Some of these are interesting and may be published in a future number.

The selection of Dr. E. M. Moore, of Rochester, for the presidency gave general satisfaction both for his personal worth and in recognition of his valuable contributions to practical surgery. It is the crowning honor of a long career devoted to the furtherance of the best interests of the profession and to the material advancement of surgical knowledge.

Nashville as the next place of meeting has the merit of being central and accessible from all directions.

IT is with much regret that we notice at this season the large number of wasted vacations. It is the old story repeated of the rich wasting what the poor so badly need. If the rich would really use the opportunities they have to improve their health and increase their strength we might bear with philosophy the necessarily exclusive nature of summer vacations, but it is discouraging to note what a large proportion of people at summer resorts fail to utilize their opportunities for improving their physical condition. At half the seaside places a majority of the people never bathe nor go boating. The women eat too much and sit on the piazzas to gossip and grow fat. The men do better during the day, but in the evening play the same old games of cards in an atmosphere of burned tobacco and lamp or gas fumes. In the parlors there is the same competitive exhibition of gowns, "figures" and jewels that is seen in the winter, with simply a difference in fabrics and fashions. Drives and piazza promenades help the situation somewhat, but not enough to be of real use.

To secure rational enjoyment and to store up vitality and vigor for the long season in town are the main objects of a change in the summer. To miss these is to waste time and money.

SEVERAL hundred railway surgeons met in St. Louis, May 2, to attend the Second Annual Meeting of the National Association of Railway Surgeons. Dr. J. W. Jackson, of Kansas City, Mo., was in the Chair, and delegates from almost every State were present. This young Association begins its career with a vigor and force which speaks well for its future. The most interesting paper read was that by Dr. J. B. Murdoch, of Pittsburg, Pa., on Torsion of the Arteries for the Arrest of Hæmorrhage. It elicited a general discussion which demonstrated the fact that this excellent method is not so widely practiced as it should be. The paper will be published in the September number of this JOURNAL.

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ORIGINAL ARTICLES.

ARTICLE I.

Tuberculosis in Sleeping Cars.

By Dr. J. T. Whittaker, of Cincinnati.

At the third annual meeting of the N. Y. P. and O. R. R. Surgeons' Association, held at Lakewood, N. Y., July 9, 1889, the doctor who is Professor of the Practice of Medicine in the Medical College of Ohio, and physician to the Good Samaritan Hospital, on invitation from the Association made the following remarks on the above subject:

The fact that we are a nation of travelers is pretty well proven by the existence of this society. Some of us pass a great part, all of us some part, of our lives in travel, and in our day mostly by rail. Internal medicine is concerned in this subject, as much if not more than surgery, for, as it has been shown that a single disease, dysentery, kills more men in war than the enemy's guns, so it may prove true that more disease than accidents occur in railway trains.

It is now a well established fact that the infections which constitute the chief part of internal diseases, are pretty much all home diseases, and as railway cars constitute permanent or temporary homes the construction and management of them, more especially the sleeping cars, falls in the province of the physician and sanitarian. The range of the infectious diseases or the possibility of contracting them is too wide for an hour's description, so that the present remarks will be limited to one, the chief one, viz.: tuberculosis, the mode of infection of which has been only definitely determined in the last few years.

The introduction of this subject needs no apology in any medical assembly and it is almost tiresome to hear it. One expression of it, consumption, alone destroys two-sevenths of mankind and one-third of the working population. Other localizations or masked expressions as the marasmus of infants, enteritis, meningitis, hip-disease, caries of the vertebræ, affections of the larynx, to say nothing of catarrh, bronchitis, pleurisy, pneumonia, etc., many of which are really tuberculosis, increase the percentage of attack to five-sevenths at least. The truth is that tuberculosis is so common that, as Singleton Smith says, we have almost grown apathetic and fatalistic about it. Koch's discovery which enables us to declare absolutely what is tuberculosis and what is not lifted this cloud of indifference and showed up the subject in entirely a different light and with the startling revelation that if the disease can not be absolutely cured it can be absolutely prevented. It is from that point we shall study the subject to-day.

The insuperable bar to progress in the study of the disease has been the question of heredity and it is necessary to break this barrier before we may have any intelligent comprehension of the mode of infection and true prophylaxis of this disease. It would be superfluous, in this assembly to waste much time in the refutation of this view. The accurate statistics of Williams and of Pollack, which show that parents are affected in but twelve per cent. are enough of themselves to attack it, and the fact that brothers and sisters are affected in twenty-four per cent. should certainly subordinate the role of heredity to that of association with affected cases. Children do unquestionably contract the disease from parents, but not by hereditary transmission.

If tuberculosis were transmitted by heredity it would have to be transmitted through the ovum, spermatozoid, placenta or blood. The truth is that the presence of the bacillus tuberculosis is a great rarity in all these structures; moreover if the disease were transmitted by heredity it should show itself first in the internal organs, the liver, spleen, kidneys, etc. But this is precisely what it does not do. The liver is very rarely affected and the spleen and kidneys almost as seldom, and then in pretty much all cases, only after and in consequence of emigration from the lungs. So also most cases of hip disease, vertebral caries, intestinal affection, meningitis, laryngeal affections follow and depend upon primary deposit in the lungs. This fact was made patent by Louis long ago.

To the lungs we must look for the primary affection in the vast majority of cases, and if to the lungs to the air which enters them. The now well-known investigations of Comet supply the hitherto missing evidence. He made sponge scrapings of head-boards of bed, etc., in the rooms inhabited by patients suffering from tuberculosis, injected infusions of the sponges into the bodies of animals and thus conveyed the disease. When patients used sputum cups or cuspidores and never spat upon the floor or upon clothing, handkerchiefs, etc., the walls and furniture were pure and free so far as this disease is concerned, but feather beds cleaned six different times by various devices still remained infected. The closer the room or the more crowded the apartment the greater is the danger of the infection. Hence the frequency of the disease in factories, convents and prisons. The mortality in prisons, in the last years of a long confinement mounts to ninety per cent. Ziemsen says, indeed, that imprisonment for ten or fifteen years is imprisonment for life. The young "candidates" who come into the convent from the country rosy-cheeked and robust gradually fall into anæmia, debility, amenorrhœa, the precursors of cough, hæmorrhage of the lungs and progressive-emaciation.

Houses once infected remain so for many months. Flick showed that in thirty-three per cent. of the houses in Philadelphia multiple cases occurred and only ten per cent. in isolated houses. It is now a common observation that members of hitherto unaffected families contract the disease in moving to an infected house, and this observation no longer surprises us that we know something of the tenacity of life in the tubercle bacilli. Cadeac and Millit have shown us that sputum remains infectious after dissection of 102 days, and for six months if left, kept at a temperature of 77° F. Frozen for a week they still remain virulent for seventy-six days and Volsch has proven that a single boiling scarcely attenuates its infectious properties.

It would be difficult to conceive of a conjunction of circumstances more directly aiding in the dissemination of this disease than is offered in the palace car. It is always badly ventilated, the vestibule car especially is close and hot, sixteen to thirty persons being crowded into a space which might make a small hall in a house but never a bed-room for a pair of human beings. Somebody is always hurt by a draught and windows are kept closed to prevent full ventilation as well as ejection of sputa which is mostly deposited on the floors. Cuspidores never contain water and are generally used as waste baskets or slop jars, and the temperature is raised to a degree sufficient to rapidly disseminate infectious matter.

With the gathering shades of evening the compartments which contain the bedding are opened to diffuse through it a disagreeable odor. The bacillus is treated to the visible luxury of clean sheets and pillow cases but the blankets, mattresses, carpets and, worst of all the curtains remain the same till worn out. Consider now that every car curtain is or has been recently occupied with a consumptive patient if only en-route for a change of climate, and that through ignorance, carelessness or weakness, there comes to be deposited upon bedding, curtains, etc., tuberculosis matter, what becomes of it if it be not dried and disseminated through the car, or gradually incorporated into the lungs of the tired traveler ?

It is a curious fact that the first note of alarm of this kind should have been sounded by a layman, viz., a barrister in Australia, who published in the *Australian Medical Gazette* last November a protest against admitting consumptive travellers into the same cabins with healthy people. The danger is in the one sense far greater in ships that people are so closely confined in the cabins, and as the author states, considerations of humanity prompt the well man to close the port in protection of the sick. Then also the trip is much longer. Yet on board ship we can escape to the upper deck where in fact many spend most of their time, but on the train there is no such retreat and on some of our express trains not even do we get out into the fresh air for our meals or other necessities of life. A ship passenger may mount to the deck, a prisoner is allowed a part of each day to walk in the free, as the Germans say, but a traveller on an express train is, for all the world in the condition of dogs inclosed in boxes made to breath atomized tuberculous matter until even dogs, naturally immune, become infected with the disease.

But it is one thing to find fault and another to suggest the remedy. The plush, velvet and silk hangings must go. Seats must be covered with smooth leather that can be washed off. Carpets substituted with rugs to be shaken in the open air at the end of every trip or better still abolished for hard wood floors. The curtain abomination must give place to screens of wood or leather, the blankets of invalid's beds be subjected to steam at a high temperature, mattresses covered with oiled silk or rubber cloth that may be washed, and above all things, invalids provided with separate compartments shut off from the rest of the car, with the same care which is taken to exclude the far less offensive or dangerous smoke of tobacco. Cuspidors half filled with water and consumptive travelers provided with sputum cups which may be emptied from the car. It is not necessary to say here that the sole and only danger lies in the sputum. The destruction of the sputum abolishes the disease. When the patient learns that he protects himself in this way as much as others, protects himself from auto-infection, from the infection of the sound parts of his own lungs he will not protest against such measures. It is easy to say too much upon this subject and to appear in the role of an alarmist, but when we consider the unrecognized source of so many cases in connection with our definite knowledge of the cause of the disease is it not wise to look at the construction and management of the sleeping cars? May it not be a death trap in more ways than one?

ARTICLE II.

THE IMPORTANCE OF RECTAL EXAMINATIONS TO LIFE INSURANCE COMPANIES.*

By JOSEPH M. MATHEWS, M.D., Louisville.

The importance of a thorough examination of all applicants for life insurance, cannot be overestimated; so well recognized is this, that all companies aim to secure the services of competent physicians as examiners. Nevertheless, many persons are passed who should not be. Whether this be from incompetency or from gross neglect, we will not stop to argue. Be this as it may, certain is it, that an injustice is done the membership, or company, each and every time that an applicant is passed who is below the physical standard. So careful is the state of its citizens' welfare, that laws of protection are passed, and each company seeking to do business in any particular state, must conform *in toto* to its laws, or be prohibited from transacting business inside its borders. In keeping with this, each reputable company seeks to protect those already assured, from any imposition. Hence, it is, that a long list of questions, looking to a confirmation of good health and family history is asked, and the applicant required to go through a rigid, physical examination. If he stands the test, he is accepted; if he does not he is rejected. The reason for rejection is sometimes based upon that, which the longevity of the applicant may afterward prove to have been a mistake. As, for instance, the height of the individual must be in proportion to a certain established measurement of the chest or abdomen, or to the weight of the body. Again, if an applicant shows a family history of tubercular trouble he is liable to be rejected, or in case he have a lung deposit he is sure to fail in being recommended, notwithstanding the fact that many persons whose parents, one or both, have died with phthisis may escape the disease altogether, and, it can be asserted, that many who have had tubercular lung deposit have been cured. I do not cite these instances, either of which can be found in the questioning of any good life insurance company, to condemn them but rather to applaud this caution on their part. But it must be conceded that the applicant for life insurance must be protected in his rights, equally with those who are already assured. If he be rejected either by the incompetency of his medical examiner, or through the fault of the company's ruling, he is forever barred from acceptance in any first-class company. The responsibility of the medical examiner for life insurance is a very grave one and, I am inclined to believe, is too often overlooked. The comfort, the happiness, even the lives of many may rest upon his decision. Each and all of us are more or less interested in this subject, and this forms my excuse for writing this paper for your consideration. There is a class of trouble to which the barest attention is paid by the life companies, and yet this very class tends to more serious complications, and fatal results, than the majority cited in the life policies. I allude to diseases of the rectum. With your permission, I expect to prove:

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* Read before the Kentucky State Medical Society, May 9, 1889.

1st. That there are diseases affecting this portion of the body which are wholly unrecognizable save by a careful *exploration* of the rectum.

2d. That these diseases are self limited, incurable, and always fatal.

3d. That the interim between their incipiency and full development is so vaguely marked, and the insiduousness so obscure, that nothing less than a full exploration will reveal their nature.

4th. That in this interim were the person to apply for life insurance, he would, if he met the other requirements, which he would likely do, be received into any life company. To elucidate my meaning you will permit me to mention a few cases that been taken at random from my record book.

Case I.—Mr. C. about 45 years of age, came to me at the instance of his physician, for an examination of his rectum. He remarked that his doctor was not sure that he had any rectal trouble nor was he, yet because of the fact that he strained at stool and passed a little blood and mucous, he sought the examination. Placing him in the recumbent position and in a good light I carefully examined the rectum with the speculum, but the instrument revealed nothing. Removing it I inserted my finger and asking the patient to "strain down" I was enabled to explore the gut for six or seven inches. At the end of my finger I was sure I detected a hard growth which seemed to extend upward. Although there was no gland complication, I gave it as an unreserved opinion to the physician that this man had malignant disease. He was given treatment by injections, and in a few days the symptoms closed up, no discharge of blood or mucous, no straining at stool. After this he took a journey of some 1,500 miles, upon his return he called at my office to say that he was well. He had a rest from all bad symptoms for several months. In this term (I afterward learned) he applied for a life policy of $10,000, and passed the examination and was received. After awhile his symptoms reappeared; the tumor could be felt through the abdominal wall, in sigmoid flexure, perforation eventually took place and he died—of cancer.

Case II.—Mollie T. unmarried; about 28 years old; of easy virtue, and gave a history of syphilis though no evidence of it; had had several abortions produced upon herseif; having money she never inhabited public houses of prostitution, but was kept; was well nourished, and used to all the comforts; came to me to be treated for constipation. Upon examining her, I detected a band-like stricture about two inches above the external sphincter muscle. I advised its division but she would not consent. Said she would submit to any other treatment. Consequently I practiced gradual dilatation, until a number eight Wale's bougie could be admitted. She then failed to report for a number of months. When I saw her again the stricture had gone back to its former small proportions, and the same course was pursued.

I should mention that after the first dilatation a large amount of fæces was passed aided by the syringe. After the second course of treatment, she again disappeared and I did not see her for about eight months. Meeting her on the street one day she said that she would call soon as she was getting very constipated again. I warned her then as I had often done before that if she did not attend to herself she might die in consequence. She apprehended this, but failed to report, and in a few days went on a long journey. A telegram was received on the third day saying she was dead. Her physician wrote me that she died in consequence of fæcal impaction above the stricture.

Case III.—A gentleman, æt. 30 years, consulted me for constipation. His history was like many who suffer from this trouble; said he had taken many forms of purgative pills as prescribed by physicians or friends, until they would lose their effect. Had taken as much as three drops of croton oil without effect. I examined his rectum several times but could find no trouble. The symptoms persisting I searched the bowels with bougies and detected a stricture at the entrance of the sigmoid flexus. He was put under the effect of chloroform, and by inserting my hand into the rectum I was enabled to get a finger through the stricture, then a cone was made of three fingers and pushed through breaking the stricture. During all the time of his complaint he never lost a pound of flesh or refused to eat a meal.

Case IV.—Dr. B. asked me to see a young married woman with him who was strangely affected. Had been constipated for a long time, but was now unable to have an action. An examination revealed a stricture just above the external sphincter muscle. She was anæsthetized and the stricture divided. She made a good recovery.

Case V.--A young man, æt. 25 years, was brought to me by Dr. G., suffering with a disposition to go often to stool and passing mucus; no blood. With the finger I detected nodules four or five inches up the gut; too high for excision. I gave it as my opinion that this was incipient cancer. Under injections all bad symptoms disappeared. For months thereafter he was in splendid health, not losing a pound of flesh, and eating and sleeping well. After so long a time his symptoms re-appeared; deposits gradually took place in the rectum; strictures were formed in consequence; glandular involument; loss of flesh; bad color, etc., etc., and the man is now dying at his home, of cancer.

Case VI.—A lady, married, mother of six children, aunt of the last named patient, apparent good health, came to consult me for piles and constipation. Said she had been advised a good while ago, to come to me, but was prejudiced against me for the reason that I had never done her nephew any good. An examination showed too strictures, two and three inches above the sphincter. These were divided, but I gave a bad prognosis, because I believed them the result of either cancer or syphilis. She has gradually grown worse, strictures re-appearing, loss of flesh, etc., and it is only a question of time when the disease will end fatally.

Case VII.—Mrs. P., the wife of a doctor, accompanied by her brother-in-law, also a doctor, came to me for some "trivial" rectal affections, piles, likely, the doctor said. An examination revealed a scirrhus cancer, filling the capacity of the rectum. She died in about eight months.

These cases will suffice to illustrate my points.

Remarks.—The first case verifies all four of the propositions laid down in this paper: 1st. The disease could not have been recognized save by a thorough exploration. 2nd. It proves to be both serious and fatal. 3d. In the interim between its incipiency and termination he was accepted for life insurance, and the company suffered a loss of thousands of dollars, which could have been avoided by a careful rectal examination.

Case 2nd substantiates the propositions as well, except no application was made for insurance. It might be said that in this case a history of syphilis was given, and for this reason the person would have been rejected. In answer I would say that in many cases of syphilis the only local manifestations are found in the rectum only—hence might escape the attention of the examiner. The fact that a person has once had a local sore is not *primafacia* evidence of syphilis. Again, it is not necessary for stricture of the rectum to result from specific or malignant causes to have a fatal result, as is evidenced in cases 3 and 4. The 5th and 6th cases demonstrate that malignant trouble may exist in the rectum for a long time, and give but a faint intimation by symptoms of the gravity of the trouble. During this time if the person affected should apply for life insurance the chances are that he would be received. In each and every instance I believe that a careful rectal exploration would reveal the disease, and its detection would save the life company the amount of the policy. No life company, to my knowledge, requires rectal examinations, and by their neglect to do so, I am convinced by an actual experience that they lose thousands of dollars annually, besides doing an injustice to those already assured. A few questions are asked in some policies relating to rectal trouble, as: "Has the applicant ever had piles or fistulæ ?" two diseases which are usually not productive of harm or a detriment to long life, and yet diseases of greater moment are entirely neglected.

ARTICLE III.

TRAUMATIC PELVIC CELLULITIS.*

THOMAS H. ALLEN.

During the past ten years excellent opportunity has been afforded me, as Visiting Surgeon to the Department of Diseases of Women in the New York Charity Hospital, for the study of the traumatic diseases of the uterus resulting from childbirth, especially that form of traumatism producing laceration of the uterine neck, to which I shall confine myself in this paper, as all these cases occurring in the Maternity Hospital are transferred to our department.

It will thus be noted that under the light of scientific advancement and increased surgical skill of the present time, which finds able exponents in the Visiting Staff of the Maternity Hospital, wounds of the cervix uteri are unavoidable in a considerable proportion of cases. I shall limit my remarks to what I have designated "Traumatic Pelvic Cellulitis." It is a disease *sui generis*, and, if my deductions are correct, its appropriate treatment differs radically from the views I have entertained regarding cellulitis being always a contra-indication to the performance of the operation first done by Emmet in 1862,† and described by him, 1869,‡ in a paper read before the Medical Society of the Counties of New York, to which Drs. Dudley and Munde|| gave the name trachelorraphy and hystero-trachelorraphy respectively.

This cellulitia is always associated with a unilateral or bilateral laceration of uterine neck; much more frequently with the former, inasmuch as a unilateral tear of the neck having for its purpose the identical object of a double tear is more likely to be deeper than its congener; and my clinical observation suggests the aphorism: "The deeper the laceration the more likely are we to have traumatic cellulitis." When the cervix uteri loses its continuity of tissue through a tear its inherent sphincteric action widens the gulf between the separated and bleeding borders. If the labor should have been tedious

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* Read at the Fifth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, on May 28, 1889.

† Emmet's Principles and Practice of Gynæcology, p. 448.

‡ N. Y. Med. Journal, Jan., 1878.

|| Amer. Journal of Obstetrics, Jan., 1879.

and the presenting part had pressed firmly upon the tensely stretched neck, a temporary paralysis—if I may use the term—ensues, and primary union may occur in advance of or simultaneously with a recovery of uterine contractility. This is especially observable in cases in which the laceration has been either anterior or posterior. I do not believe that in every case of laceration the involution of the womb is arrested, but numerous examples of subinvolution of the uterus associated with laceration have led me to consider the relations of cause and effect, to be *positive* and *direct.* A laceration through either or both labia uterina nearly always causes an arrestment of the process through which the womb returns to the normal measurement of multiparous woman. I believe my observation as to the causative relation of laceration of the neck and sub-involution is in accord with that of most gynæcologists in this country, yet a very emphatic dissent is quoted by Dr. Munde and his associate editors in the fourth volume of the "Annual of Universal Medical Sciences," for 1888, on page 2, wherein Noeggerath states among other equally radical views that: "Laceration of the cervix does not affect the position of the uterus nor does it cause any increase in the depth of the uterus." It is not within the scope of my paper to consider the part which laceration plays in its etiological relation with uterine diseases. I would merely state that experience leads me to a positively contrary opinion to that expressed by the eminent and able gentleman whose opinion I have quoted. His deductions were based upon an examination of one hundred cases. In this number he could not have included a lady who came under my care subsequently to her having been treated by Noeggrath for laceration, the object of which treatment was to cure the laceration by filling up the tear with what is worse, viz.: cicatricial tissue. When she visited me I held a consultation with an eminent gynæcologist, who agreed with me regarding the advisability of performing trachelorraphy. In this case the uterus measured three inches, and four weeks after the operation, a complete result having been attained, it measured a little less than two and one half inches. However, the views of Dr. Noeggrath may not be so radical after all, in regard to the point culled from the volume alluded to. Gray gives the normal measurement of the uterus as three inches, while Savage, in his book entitled "Savage on the Female Pelvic Organs," fifth edition, page 28, gives the normal measurement as two and one-half to three inches. This was in reference to multiparous uteri after they had been examined post-mortem and injected so as to increase the size to that of the living. The womb varies in size in different individuals, from two inches to two and one-half. I have never examined a normal womb which measured as much as three inches even in women who had borne children, which increases the longitudinal measurement about one-fourth of an inch. If Dr. Noeggrath regards three inches as the the invariable normal length of women who have borne children, I can readily comprehend the logic of his deduction.

The clinical features of the traumatic pelvic cellulitis are most concisely presented by the narration of a few cases.

Case I.—Mrs. R., æt. 29, married, has had three children, the last two of whom are living. Subsequently to last confinement, which occurred nearly eighteen months ago, her health, hitherto perfectly good, began to fail; labor was tedious; being a "dry labor," though delivery was not instrumental. The flow continued several weeks, changing in character as to color from a sanguinolent hue to light amber. It would stop entirely for a day, then occur upon moderate exertion; at the end of about three months it stopped entirely. Continued to nurse her child. Patienthad been curetted with negative result. Since her confinement Mrs. R. had become pale and anæmic; had intense headache, referrable to the top of the head, usually though not always limited to this location; it would radiate from a point on the vertex anteriorly and posteriorly; suffered also from syncope which had become more frequent; had pain in left iliac region—pain in back, frequent micturition. Examination eighteen months after delivery revealed laceration (left lateral) one-quarter of an inch in depth. Uterine neck enlarged; length of uterine cavity three and three-quarter inches. Thickening beyond the utero-vaginal junction in left broad ligament which was circumscribed and extremely tender to touch. Among the subjective symptoms, I omitted to mention dyspareunia. Position of uterus slightly ante-verted.

Diagnosis: Traumatic cellulitis. Tonics had been given, hot water had been used faithfully after the manner advised by Emmet * so that the vagina had become exsanguinated and its fatty support partly absorbed. But the tenderness remained, though less severe at times. The thickened area of left broad ligament beyond the utero-vaginal junction, at different times, would swell up, becoming as large as an olive, hard and tense, though this did not increase the pain. This, I believe, was due to excessive congestion superadded to the thickening from the cellulitis.

Trachelorraphy was advised and performed after next menstrual epoch which was over in a week from time of last examination; menstruation had been regular during past six months, and was unaccompanied by special pain.

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* Principles and Practice of Gynæcology, pp. 51–52.

An incision with straight scissors was made through the angle of laceration down to the utero-vaginal junction to which point the laceration must have originally extended, as a dense plug of cicatricial tissue occupied the line traversed by my incision. I then vivified the gaping borders cutting out the cicatricial tissue and inserted five silver sutures in the usual way.

During the operation the hæmorrhage was unusually copious. The patient was placed in bed in the recumbent posture. Her water was drawn by flexible catheter every six hours.

There was no untoward symptom from the beginning, excepting increased irritability of the bladder from catheterization, which at the end of the fifth day was discontinued and the bladder washed out with ac. boracic gr. xxx to each pint of tepid water. Eighth day after operation the silver sutures were removed. Union was complete. Patient was kept in bed two weeks longer, then permitted to sit up and begin exercise cautiously. At the time of her getting up there was no tenderness, and the heat and pain on left side had diminished markedly. Patient rapidly got well and continues so at the present time, two years after operation. Uterus measured two and a half inches, six weeks after operation.

Case II.—Mrs. P., residing in Boston, æt. 29. Married; one child still-born, two years previous to consultation, labor tedious; delivery instrumental; lochial profuse and irregular, continued ten weeks. "Had lost health since," indicated by diminution in weight; general facial acne vulgaris. Hemicrania recurring irregularly, often every week; pain in back; irritability of bladder, mental depression, suspicion, jealousy, loss of appetite, pain of a burning lancinating character in left ovarian region which at times was sensitive to pressure of corsets. Pain on coitus, which for this reason was rarely indulged; mental irritability, lack of self-control, would lose her temper upon the slightest provocation; constipation. Mrs. P—— had, upon the advice of her physician in Boston, gone to the Hot Springs of Arkansas, and sojourned there for two months without benefit, but with injury, as mercury had been freely administered to the extent of salivation (mild) Examination was made under anæsthetic administered by Dr. Brinkman, of Brooklyn, owing to nervous irritability of patient.

Diagnosis; Unilateral laceration of uterus, neck and traumatic cellulitis of left broad ligament limited to about one-half inch beyond utero-vaginal junction. As patient had used hot injections under the advice of her physician, it was determined to operate five days afterward; in the meantime hot water injections with ac. carbolic (℥i–oj), was prescribed to be used five times daily. Pain continued, with other symptoms. Trachelorraphy was performed after the manner described in Case I. Patient recovered. Two months after operation she came back from Boston, having been obliged to return home five weeks after operation. At this time she felt better, acne had almost entirely disappeared. There was no tenderness (pain on touch), and health was improved in every way. She was cheerful and bright. Since this time, over a year ago, the patient whose marital relations were strained, has lived with her husband happily.

Case III.—Mrs. O'C., æt. 33 years. Married second time. Native of Ireland; lived in United States since early girlhood; had one child by first husband over two years ago; child died in infancy; patient had tedious labor; does not know whether instruments were used; since birth of her child has never felt well; thought if she married again would improve her health, but was disappointed; complains of pain over lower part of abdomen and in left iliac region, which was sensitive to pressure; had pain during menses which were profuse and scanty at different times; had tympanites, anorexia, constipation, hæmorrhoids. Symptoms referable to nervous system were neuralgia, flushing of the face. She was subject to rush of blood to her head, when her face would become scarlet; mental depression; anxiety—as if a calamity were impending; palpitation and pain in cardiac region. She had leucorrhœa and bearing-down pain in her back. Examination revealed laceration of left uterine neck, cellulitis of broad ligament (circumscribed), moderate retroversion of womb; endocervicitis arcolar hyperplasia of neck, and subinvolution. Uterine measurement longitudinally three and three-quarter inches. There was tenderness to touch internally, especially in region of thickened left ligament, though the sensitiveness was diffused. Left ovary was prolapsed into Douglas's cul-de-sac.

Three months were devoted to local and general treatment; tonics were given internally; rest, incomplete, as she was obliged to be up and about more or less. Locally, copious douches of boracic acid were used ʒii-oj of hot water; applications of glycerine and alum were made. Tinct. of iodine was applied to the eroded uterine lacerated neck. The uterus was replaced, and it, with the prolapse ovary, was supported as far as was practicable by means of tampons of borated cotton (twelve per cent. boracic acid.)

Patient improved, but the pain continued in the left ligament affected by cellulitis. I sent her to St. Elizabeth Hospital, and there did Emmet's operation—trachelorraphy. The bleeding was profuse. She made a rapid recovery, and when I last saw her, some months ago, there was no cellulitis; the uterus measure two and one-half inches. The prolapsed ovary remained in Douglas's pouch, special treatment for its restoration having been neglected by the patient in her enjoyment of immunity from pain or other discomfort.

Case IV.—Mrs. H., æt. 31 years; widow; native of United States; has one child living, æt. 9 years; had one miscarriage at six months, which occurred two years ago; has never felt well since; complains of menstrual irregularity, pain in back, profuse leucorrhœa and pain in right iliac region; hemocrania, attended with vomiting; becomes weak and extremely nervous, so that she cannot control herself; is hysterical; laughs and cries under emotions of pleasure or of sorrow; has lost flesh; has capricious appetite; eats voraciously occasionally, but as a rule has anoxexia (loss of appetite); thinks that she has heart disease; suffers from cardiac palpitation and pain in cardiac region; has tympanites; has used injections of hot water under the advice of her physician in Brooklyn. *Examination*—Traumatic cellulitis of right broad ligament and right lateral lacerations; uterine anteversion. The local symptoms were similar to preceding cases; thickening of lateral ligament one-half inch or more beyond right utero-vag. junction and pain upon touch; vagina was sensitive through neurotic irritation; endocerventis co-existed.

Patient was ordered to use hot water and boracic acid injections. Local treatment consisted in curetting the cervix and applying Churchill's tincture of iodine every other day for a week. Uterine measurement three and one-quarter inches. Uterine neck was enlarged and the labia were everted (ectropion). The congestion of vagina and uterus was relieved. Patient was a bookkeeper and could not remain in bed, which was advised, though more rest was had than previonsly. Ninth day after consultation, Feb. 26, 1888, patient was anæsthetized with Squible's ether, which I never fail to use, and trachelorraphy was performed successfully. I removed five wire sutures on March 4th. She made a good recovery. The uterus measured in January last two and one-half inches, and though no special treatment has been instituted to relieve the anteversion, the position of uterus was normal. There was no pain on pressure in right lateral ligament, and Mrs. H. had gained forty pounds in weight.

Case V.—Mrs. D., æt. 40 years; married; five children. My notes do not say when last child was born, but it was some years previously; delivery was instrumental. Patient had been a sufferer for years—ever since the birth of her last child. The salient features of her case were general and local, as is, without exception, the case when the disease has existed any length of time. She had lost forty pounds of flesh, was thin, and so despondent that her family feared she had melancholia; she was morbidly sensitive, and extremely irritable, now and then pouring forth a volley of abuse upon those whom she most loved; already this had led to family estrangement. She had been getting worse steadily, and was obliged to abandon exercise, as she moved with great discomfort. Mule riding being one of the fashionable diversions in her country as a pleasurable exercise, she had been obliged to discontinue three years before the time of consultation. Patient had general hyperæsthesia (hysterical) pain in her back which burned and throbbed when she lay down in bed at night; had burning pain in left iliac region; tympanites at varying intervals, and always after menses, which were regular and normal, as to flow, but painful. I expected to find a salpingites in this case, but I discovered a laceration (bilateral), the one on the left side being deep, that on the right superficial, and the left ligament affected by chronic traumatic cellulitis. Beyond the utero-vaginal junction on the left side the pain was intense upon moderate pressure. The uterus was in the floor of the pelvis and retroverted. The patient had used injections of hot water freely, and had been treated by a physician, the object of this treatment, according to the patient's account, and that of her daughter who accompanied her to New York, was to close or fill in the gap by superadding cicatricial tissue. Uterus measurement three inches +; it was too painful to measure until I was about to operate subsequently. *Treatment.*—Uterus was replaced to its normal position and held there by means of absorbent cotton, saturated with glycerine and alum solution. Applied lotio niger each alternate day, which lessens congestion and reduces tension incident to it. One week afterward I operated upon Mrs. D., trachelorraphy; the bleeding was profuse, but she made a good recovery, having had no unfavorable symptoms excepting extreme nervousness and moderate pain during my absence of a week, through a sudden call to Canada two days after removal of the sutures and ninth day after operation.

Six weeks after the operation there was no pain in broad ligament; back continued painful, but her general health was better. She said she felt relieved of a thing that had been knawing at her these years.

Seventh week after operation she undertook the long journey homeward. She arrived safely, and continued perfectly well when I last heard from her. So great was her relief and her husband's delight, that he sent me a complete collection of the serpents of the republic of Guatamala, to symbolize our art, I suppose, which I, in turn, presented to the American Museum of Natural History in New York.

It must not be inferred from the narration of these cases that I am prone to operate in cases of laceration, complicated with cellulitis; such is not the case; principles of conservatism must govern the surgeon in operating upon the female pelvic viscera. Prof. Chas. C. Lee, in an admirable article, read before the New York County Medical Society, which may be found in Vol. xx., *Medical Record*, of 1881, on pages 78–80, states, in his third proposition: "When any decided inflammation exists about the uterus, or so long as any tenderness can be detected in the neighboring connective tissue it is unsafe to operate." And Dr. Bache Emmet, in an able and exhaustive article on Lacerations of the Cervix Uteri and Their Treatment, in the "American System of Gynæcology, Vol. ii., page 681, states, in reference to trachelorraphy: "I know of no contra-indication except a pelvic inflammation." He states on the same page, however, previously, to the above quotation: "In other cases the indurated and sensitive angle of laceration will be very marked and easily detected from the first, and in these cases there can be no question as to the necessity of removal of such a *foreign body* as a cicatrix." In this, I believe, Dr. Emmet has touched the keynote of the treatment, for I believe this foreign body is the cause of the coexisting cellulitis. There is a limited class of cases in which the use of copious injections of hot water (intra-vaginal) and well directed local as well as general treatment may improve but not cure a coexisting cellulitis. These cases broaden the field for trachelorraphy. This class I have designated "Traumatic Pelvic Cellulitis," to distinguish it from the more diffuse form of pelvic inflammation. It is primarily occasioned by a wound, a tear, and nature, in her unassisted efforts to repair the loss of continuity in the uterine neck builds up a structure pathologically different from the adjacent tissue which operates similarly to a foreign body. It is like cellulitis in the forearm, occasioned in an insane woman by stigmatization with small pieces of glass; small spicula of glass remain in the areolar tissue, the wound heals, but there remains a chronic form of inflammation which does not suppurate, but results in cellular thickening, attended with pain and slight swelling, which increases to-day and diminishes to-morrow, until finally relieved by excision. The operation removes the cicatricial tissue (the foreign body), and completes the sphinteric arc of the circle with tissue histologically identical. The bleeding relieves the congested blood vessels and lymphatics, and a new impulse is given the processes of nutrition.

I will briefly recapitulate the points in my paper:

1st. Lacerations of the cervix uteri may result in the formation of cicatricial tissue, which produces chronic traumatic pelvic cellulitis.

2d. In a limited number of these cases, local or general treatment or both will not subdue this inflammation and pain.

3d. Having endeavored to do so unsuccessfully, trachelorraphy may be performed successfully.

4th. The dense mass of cicatricial tissue operates similarly to a foreign body, and its removal by Emmet's operation is a logical remedy which precludes the possibility of its re-formation.

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SELECTIONS.

The Premonitory Symptoms of Alcoholic Paralysis. By James Ross, M.D., LL.D., F.R.C.P, Physician to the Manchester Royal Infirmary; Joint Professor of Medicine to the Owens College.

Nothing helps us so much in the treatment of a disease, if it be of such a nature as to be capable of cure or amelioration, as an early recognition of the symptoms of its inception. This statement, true with regard to most affections, assumes additional significance when we have to treat a disease like alcoholic neuritis, which can be readily cured in its early stages by the simple withdrawal of the poison, without any special treatment, but which, when fully established, may resist all treatment or prove rapidly fatal.

Alcoholic paralysis, on attaining to the stage of double wrist and ankle drop, loss of the patellar-tendon reactions, and high-stepping gait, is now readily recognized by every moderately well-informed practitioner, and accurate descriptions of it have found their way into ordinary text-books of medicine. It is, therefore, quite unnecessary for me to give in this place a detailed description of the condition. I will also pass over such well-known signs of alcoholic poisoning as a bloated face, lightning-like and neuralgic pains in the extremities, morning retching, and muscular hyperæsthesia, in order to direct special attention to three symptoms which I believe to be hardly ever, if ever, absent as forerunners of this form of paralysis, although they are by no means peculiar to poisoning by this agent, being met with in other forms of peripheral neuritis. These symptoms are: (1) Disorders of the tactile sensibility of the extremities, which patients usually describe as numbness of the fingers and toes; (2) vaso-motor spasm of the extremities, named by Raynaud "local asphyxia," and which the patients refer to as "deadness" and "coldness" of the fingers and toes; (3) severe cramps, which are most frequent and severe in the muscles of the calf, although these muscles are by no means the exclusive seat of them.

In order to give greater vividness to my description of these symptoms, I have instructed my clinical clerk to note down in my presence the statements of five patients, the subjects of chronic alcoholism, now under treatment in the wards of the Manchester Royal Infirmary. In order to avoid details, I shall only give such a rough sketch of the present condition of these patients as I think will enable the instructed reader to fill in the clinical picture presented by each from his own knowledge and experience.

Case 1.—G. C——, æt. fifty-one years, a lawyer's clerk, states that he has drunk freely of beer, but only occasionally indulged in whisky or brandy. His lower extremities, his body (especially over the loins and buttocks), and his left upper extremity are œdematous, but there is little or no swelling of his face or eyelids, even in the morning. The area of cardiac dulness is enlarged; the apex is displaced slightly downwards and outwards; the first sound at the apex is impure, the sound at the base is highly accentuated; and the action is very irregular; while the pulse beats 110, and is feeble and intermittent. Scattered sonorous rhonchi are heard over both lungs, and the patient expectorates a moderate quantity of frothy mucus. The urine contains a small quantity of albumen, but its specific gravity is 1020, and it deposits a considerable quantity of urates on cooling. The patient's grasp is feeble, and he experiences some difficulty in performing special movements with the fingers and thumb, but there is no distinct wrist drop. The patient is very feeble on his legs, but there is no ankle drop, and no distortion of the toes. The patellar-tendon reactions are, however, absent, and the muscular masses of the extremities are very tender to pressure. The diagnosis of this case is that, although the urine contains a little albumen, the anasarca is due, not to renal disease, but to dilatation of the heart, caused by the abuse of alcohol, the condition being aggravated by the presence of a little bronchitis.

Case 2.—A. G——, æt. forty-nine years, market porter, states that he drank freely of beer, but had whisky or spirits of any kind only on rare occasions. The patient is suffering from ascites; he has been tapped once since his admission, and now he is filling up again. The liver dulness is only about an inch in vertical extent, and the veins on the surface of the abdomen and chest are distended, and fill from below. The patient is feeble and emaciated, but there is no special paralysis, and the patellar-tendon reactions can still be elicited, although they are very sluggish. The diagnosis is alcoholic cirrhosis of the liver. There is no tenderness on pressure of the muscles.

Case 3.—G. C——, æt. forty-nine years, coachman, admits that he indulged freely in alcohol, although he never got drunk. His regular habit was to have a glass of rum in milk when he got up in the morning; he had a glass of beer in the forenoon, another to dinner, and a third when he got home at night, to be followed by whiskey when he could get it. He is suffering from anasarca of the lower extremities and trunk, but the upper extremities and face are free from any swelling. The cardiac dulness is enlarged, and the apex is displaced slightly downwards and outwards. A soft, systolic murmur is heard at the apex, and the second sound at the base is highly accentuated. The urine is pale, specific gravity 1010, and contains a considerable quantity of albumen, while a few fatty casts have been found in it. The grasp is feeble, and the patellar-tendon reactions are absent, but there is no wrist or ankle drop, and no evidence of particular paralysis beyond general weakness. The muscles of the calf were tender on pressure when the patient was admitted to the infirmary about six weeks ago, but this has now disappeared. It is possible that in this case there is a renal complication, but the absence of œdema from the upper extremities and face seems to indicate that the anascarca is due to cardiac dilatation, of alcoholic origin.

Case 4.—J. S——, æt. forty-six years, tramcar conductor, says that he drank freely of beer and whisky. He is suffering from double wrist and ankle drop, high-stepping gait, loss of patellar-tendon reactions, muscular hyperæsthesia, and other sensory symptoms which are usually met with in a moderately advanced case of alcoholic paralysis.

Case 5.—A. A——, female, æt. sixty-three years, entered the infirmary under the care of Dr. Lloyd Roberts. She denies having indulged to excess in alcohol. She is the subject of an ovarian cyst, but the abdomen is not much distended. Her lower extremities are partially paralyzed, so that she cannot stand without support, and some months ago she was hardly able to move her feet in bed. There is double ankle drop, and the toes are flexed into the soles of the feet. The grasp is feeble, but there is no distinct wrist drop The patellar-tendon reactions are absent. There is, however, no muscular hyperæsthesia or other sensory disorders. The diagnosis is that the patient is suffering from alcoholic paralysis, but that she has not had access to alcohol for some months, and that she is now slowly recovering motor power, while the sensory symptoms have disappeared.

The following is the account these patients gave of themselves on being questioned with regard to the three symptoms already mentioned—viz., numbness of the fingers and toes, local asphyxia, and cramps.

G. C—— (Case 1) states that, for the last three years, when he got to the office in the morning his fingers were so numb that on closing his eyes he could not tell whether he held the pen or not, and he experienced considerable difficulty in buttoning his clothes. He had to rub his hands together for about ten or fifteen minutes before he could write. His feet were also so numb that he could not feel the floor; they felt as if "sensation was out of them." He was afraid of closing his eyes while washing lest he should fall forward. On getting up in the morning, the tips of his fingers up to the first joints became of a dark livid color, and he had to dip them in warm water in order to get the color back and to warm them. He had a great dread of touching cold water in the morning. His feet were also so cold that he had to stamp them frequently on the floor to warm them. When he began to write in the morning, his forefinger and thumb often became strongly cramped, and the pen was held so fast that he had sometimes to remove it with the other hand. His toes also felt as if they were forcibly drawn down into the sole. About half an hour after going to bed, and just as he was about to fall asleep, he was frequently seized with cramp in the calf of one or other of his legs, but seldom in both together. During the attack his heel was drawn up, and the muscles of the calf formed a round, hard mass, larger than his closed fist. When the attack was severe he had to jump out of bed and put the soles of his feet on the floor, and not unfrequently he had to walk downstairs, and sit for an hour rubbing his legs and warming them before the fire. On these occasions he often warmed a pint of beer, and on getting thoroughly warmed himself after drinking it, he could go to bed and fall asleep.

A. G——, (Case 2), suffered for the last two years from so much numbness of the fingers that he experienced difficulty in buttoning his clothes in the morning, and whilst driving he often could not tell without looking whether he held the reins in his hand or not. His feet also felt numb, and he suffered very much from a sensation of "pins and needles" in them. On getting up in the morning, his fingers up to the first joint became of a dark livid color, and "felt as if they were dead." He generally washed his hands in cold water, although he much preferred warm water, but seldom could get it, as he had to leave home very early in the morning. He had to rub his hands for some time in order to "get the blood to circulate." At other times he warmed them by a fire, whilst not unfrequently he had recourse to drinking a glass of beer. About half an hour after going to bed, and just as he was about to fall asleep, he was frequently seized with cramp in the calf of one or the other of his legs, but never in both at once. The cramp was not often severe enough to compel him to get out of bed; he generally rubbed the affected calf for about fifteen or twenty minutes, when the spasm usually subsided, and he was able to sleep.

G. C.——(Case 3) states that he suffered for many years from numbness of his fingers, and it was quite usual with him to feel uncertain whether or not he held the reins in his hands without looking at them. He had considerable difficulty in buttoning his clothes, as he was unable to feel any article he touched. He did not suffer much from numbness of the feet or toes. In the morning his fingers felt quite cold and dead up to the second joints, and he had to rub them for some time to warm them. He never suffered, however, from cold feet; on the contrary, he was troubled with burning of the soles, and he often slept, even in cold weather, with uncovered feet. The plantar nerves are somewhat tender to pressure, and great pain is caused by pressure over the point of bifurcation of the nerves between the ends of the metatarsal bones. The anterior parts of both soles become of a red color when the feet are hanging down. The patient states that he has suffered greatly from cramps. His fingers were often "drawn in all ways," and he had "to straighten them with the other hand." Soon after going to bed he was often seized with cramp in the legs and thighs, when he had to "fly" out of bed and jump about the room for from five to twenty minutes. In severe seizures he had to go down stairs, so as to get his feet on the flagstones, as he found that exposure to the cold arrested the cramp sooner than any other proceeding.

J. S.——(Case 4) felt his fingers so numb that he could not hold any object in either hand in the dark or with closed eyes. In his occupation as tramcar conductor he was even unable to give change to the passengers. When he put his hand into his bag he could not feel the coins, and some of them got between his fingers, so that on withdrawing his hand these fell on to the floor of the car. At last he was obliged to ask the passengers to help themselves to change. On getting up in the morning his fingers became quite dead up to the second joints, and although he was the first in the house to get up, he waited until a pan of water got warmed on the fire rather than wash in cold water. If ever he was compelled to use cold water, his hands felt quite dead for an hour subsequently, and he had to rub them for a long time before "the blood began to circulate." He also suffered very much from numbness of the toes, and his feet were so cold in the morning that, for the first journey, he was in the habit of running about half a mile by the side of his car in order to get them warm. The patient also suffered very much from cramps. His fingers were sometimes drawn, and, in sitting by the fire after his day's work, the calf of one or other leg was often seized with severe cramp. He had also frequent attacks of cramp of the calf about half an hour after going to bed. When the attack began, the affected calf was drawn up into a "lump" bigger than his clenched fist; he then had to jump out of bed and press his toes on the floor, while he had to rub the muscles sometimes for over half an hour before the spasm finally yielded so that he could return to bed. He preferred to stand on a carpet rather than on the bare floor, and never placed his bare feet on a stone flag.

A. A.——(Case 5) states that, for upwards of two years, her hands were often so numb that she could not feel anything she touched, and could not tell from touch alone the texture of the cloth she held in her hand while sewing, and did not know, except by looking, whether or not she held the needle between her finger and thumb. At first her hands used to ache and burn; but after a time her fingers, especially on getting up in the morning, became quite dead and cold up to the first joints. She always washed in cold water, but immediately afterwards she rubbed her hands before the fire in order to warm them. She also suffered from numbness and great tenderness of the feet. The patient suffered considerably from cramps of the fingers when she was sewing or knitting; but her greatest distress was caused by cramp of the calf, which came on soon after she went to bed, and was generally ushered in by drawing down of the toes. In the early stage of her disease, when seized with cramp of the calf, she jumped out of bed and stamped her feet on the floor; but by-and-by she was unable to stand, and was obliged to content herself with sitting in bed and rubbing her leg until the spasm subsided. At a still later period she became too weak to sit up in bed, and her husband rubbed her legs for her, but after a time her "flesh became so sore" that she preferred to endure the cramp rather than suffer the pain caused by the rubbing.

Now, although the three symptoms which I have just described are probably always present at a moderately early stage of chronic alcoholic poisoning, yet it must be remembered that they are also met with in other forms of peripheral neuritis. I have myself observed them in the neuritis which supervenes in the course of rheumatism, gout, and diabetes, in that caused by chronic poisoning with the fumes of bisulphide of carbon and with the new explosive agent named "roburite," and in that form of multiple neuritis named by Dr. Weir Mitchell "erythromelalgia." Numbness of the fingers forms a prominent feature of diphtheritic and post-febrile paralyses, but I have not met with local asphyxia or cramp in these affections. A few cases of lead paralysis have come under my observation in which the patients complained of all three symptoms; but in these cases there was a suspicion of a complication of alcoholism as well.* Numbness and local asphyxia of the fingers and toes often accompany hæmoglobinuria, extreme anæmia and cancerous and other forms of cachexia; and many persons suffer from them habitually in the absence of any discoverable cause. It must also be remembered that in female pregnancy or uterine displacements may give rise to cramp of the calf and cold extremities, and that in both sexes the same symptoms may be caused by a loaded rectum or irritation of the bladder, and reflexly by irritation of still more remote organs. But although these symptoms, either separately or in various combinations, are met with in many affections besides chronic alcoholism, yet I do not think they are ever present in the aggravated form in which they appeared in these patients except as the result of excessive drinking or the prolonged exposure to the action of some other poison like the fumes of bisulphide of carbon. These symptoms are all the more valuable as affording an indication of secret drinking, because they appear long before there are any signs of paralysis, and at a time when the patellar-tendon reactions, instead of being absent, are either normal or exaggerated. But it is not necessary that all those who are suffering from the minor degrees of alcoholic neuritis should be heavy drinkers. It is, indeed, surprising what a small quantity of alcohol suffices to induce the premonitory symptoms of the disease in some subject, the females of neurotic families being particularly sensitive to its action. Nothing perhaps better illustrates the great sensitiveness of the nerves of some people to alcohol than the fact that a few glasses of one kind of alcoholic beverage will suffice to induce the early symptoms of neuritis, while other kinds may be taken daily with comparative immunity. It is a matter of common remark that gouty subjects are vere sensitive to beer or port wine, while they can consume a fair quantity of sherry or whiskey without experiencing any ill effects. I met a gouty friend one day at a public dinner, and knowing that he was of abstemious habits, I made a remark upon the fact that he was having a glass of wine. "Yes," said he, "I take a glass of dry sherry to dinner, and I sometimes take a little whiskey. I am also very fond of beer; bnt," he continued, "I am very gouty, and were I to take a glass of beer just now, my hands before night would burn, my fingers would tingle, and the tips would get quite numb, and were I to persist for a few days in taking a single glass of beer to dinner, my finger nails would crack longitudinally, and break off so that the edges would become jagged." The above description corresponds much too accurately to the symptoms of a slight degree of neuritis of the sensory nerves of the hands to require further comment.

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*Since the above was written, a young girl, who works in a "red lead factory," has come under my care in the infirmary. She has a well-marked blue line on the gums, double wrist drop, loss of the patellar-tendon reactions, and double optic neuritis. This patient has suffered from numb and dead fingers, and from cramps of the calf of special severity. She states that beyond an occasional glass of beer she never indulged in alcoholic stimulants, and nothing we can gather about her character and habits tends to cast suspicion upon her assertion.

It will be noticed that every one of the five patients whose cases are here narrated had to rub their hands together for ten or fifteen minutes in the morning in order to warm them, or for the purpose of getting "the blood to circulate." This habit seems not to have escaped the observant eye of our great dramatist, for Lady Macbeth is represented as being addicted to it. In the sleep-walking scene, the doctor, who with a waiting gentlewoman is a spectator, asks, "What is it she does now? Look how she rubs her hands." The gentlewoman replies: "It is an accustomed action with her to seem thus washing her hands; I have known her continue in this a quarter of an hour." That Shakspeare represents Lady Macbeth as drinking wine to nerve her for her fiendish purpose is proved when, after having drugged the two chamberlains into "swinish sleep" by "wine and wassail," she says:—

"That which hath made them drunk hath made me bold;
What hath quench'd them hath given me fire."

It is not pretended that Shakspeare knew there was any connexion between the abuse of wine and this rubbing of the hands; all that can with probability be asserted is that the original of the character of Lady Macbeth was one who indulged to excess, and was observed to have this habit of rubbing her hands.

With regard to the cramps, it is important to notice that the patient seldom complains of them, and the fact of their presence has almost always to be elicited by cross-examination. This explains how it is that the presence of cramps in peripheral neuritis has hitherto almost entirely escaped notice, In opening the discussion on Peripheral Neuritis in the Pathological Section at the meeting of the British Medical Association at Brighton (1886), I stated that "I never could assure myself that the paralysis was in any case preceded by active spasm of the affected muscle."* I was quite familiar with the fact that in alcoholic neuritis the patients complained bitterly of pains in the lower extremities, which they called "cramps," but I persuaded myself at the time that these so-called "cramps" were identical with the shooting and neuralgiform pains which form such a prominent characteristic of neuritis. The same difficulty appears to have presented itself to the mind of Dr. Frederick Taylor,† for in a recent paper on Multiple Neuritis, he says: "In Case 3 there was much complaint of 'cramps,' 'spasms' in the limbs, the nature of which was difficult to make out." Having now for the last two years questioned minutely a large number of patients, suffering from alcoholic and other forms of multiple neuritis, I have no doubt whatever that the pains described as "cramps" are really due to tonic spasm of the calf and other muscles, the torture caused by them being aggravated by the hyperæsthetic condition of the affected muscles.

THE USES OF TURPENTINE AND SCRAPING IN UNHEALTHY WOUNDS.‡ By W. Mitchell Banks, F.R.C.S., Eng., Surgeon Liverpool Royal Infirmary, Professor of Anatomy, University College, Liverpool.

I am somewhat inclined to think, that in medicine at the present day, we are too fond of imitating the Athenians of old in always straining after some new thing. Whosoever can look back over the surgery of the past twenty years can recall innumerable examples of drugs, of instruments, of operations, of plans of treatment, all of which made their *début* amid loud sounding of trumpets, and all of which time has relegated to their proper places, very near the bottom of the armamentarium. It is a comfort to find that when all these medical mushrooms and surgical exotics have flowered and withered away, there remain behind in the *hortus chirurgicus* some hardy old evergreens, apt at times to be too much neglected for their more ephemeral rivals, but in the end seeing them all out, and flourishing long after they are forgotten.

*Brit. Med. Jour., vol. i, 1887, p. 6.

†Guy's Hospital Reports (Lond., 1888), p. 274.

‡Read at the Warrington Meeting of the Lancashire and Cheshire Branch of the British Medical Association, Oct. 23, 1888.

Going about doing little odd jobs in the surgical way, as I do, some of my friends, who are kind enough to employ me, sometimes quite astonish me by the number and variety of their novelties and appliances. "Havn't I used the tetrachloride of glucol yet for disinfecting the parts *before* operation? Don't I always employ Van der Kolk's wood-wool trousers to be worn by patients *after* operation? Havn't I got the new scissor-saw-knife combination instrument brought out by Mr. Pyle-Carver of the South-West Hospital for Anal Fissure?" I am obliged sorrowfully to admit that I have not, but hope that if my friend will give me a sharp pen-knife, a bit of lint, and some turpentine, we may yet get over the small business on hand at a moment. Perhaps, however, my friend is in the right of it, and is on the improving tack, while I am getting a bit old-fashioned, and finding it harder every year to take to new ways.

The meeting doubtless sees that I owe it some prefatory words of apology for the commonplace character of my subject. Turpentine, alas! is no new, polysyllabic, chemical compound, but a most domestic drug, which every housewife can produce. Furthermore, every Materia Medica book tells us that its properties are styptic and antiseptic; and history says that once it was a great stand-by of the old surgeons. So that everybody knows all about it. But, some dozen years ago or more, I was asked by that very shrewd old surgeon, the late Mr. Long, if I ever used turpentine. I said, No. Did I know any surgeons who did? I was obliged to confess I did not; and then he told me that the sooner I used it the better, for there was no better styptic, and no more certain cleanser of old or foul wounds. I have ever since made constant use of it, and have spoken to many surgeons concerning it. They all know everything about it, but I have found that they don't use it. They are always at that particular moment trying the new tetrachloride of glucol, which has just come out, and which is greatly spoken of in the small print of the *British Medical Journal*. And so, gentlemen, I venture to ask you to patronise an old friend for whom familiarity has bred over much contempt.

One great reason why turpentine dropped out of common surgical use was the introduction of perchloride of iron as a styptic. I cannot say how the iron acts in a diluted state in arresting uterine hæmorrhage; I know that many obstetricians think highly of it. But, applied strong as a styptic to open bleeding wounds, or as a packing to cavities from which hæmorrhage is coming, I believe it to be the worst styptic than can be used. As a mere stopper of the bleeding I admit that it is very effectual, but then look at the condition of the wound left by it after a few days! It is especially dangerous when employed by the prescribing druggist. I have seen some dreadful hands as the result of its use. Let me give an outline of the sort of case. A boy, carrying a jug, falls and gets a slash across the palm, from which the bleeding is profuse. Rushing to the nearest chemist, that gentleman treats the injury according to the best of his lights. The wound is first swabbed out with perchloride of iron; then a plug of lint, soaked in iron, is jammed into it; and then a pad is put over the plug, and a bandage applied firmly over all. In twenty-four hours the pain becomes very severe, and by the second day the boy is feverish and in great distress; so the wound has to be looked at. This is a very painful process, because the dressings stick fast to it. Black masses, difficult of separation, adhere to it over most of its surface, while at other places beneath these are collections of dirty, purulent fluid. No sooner is the black cake taken away than the bleeding commences again, and so the wound is rapidly sponged out, and a fresh swabbing and packing with iron resorted to. Then the pain recommences, the arm begins to swell and feels hot, while red streaks run up it. The patient is in a high state of fever, and almost delirious. At this stage it is deemed prudent to send him to hospital. Now, this is not by any means an imaginary picture. I have seen several such cases, but it is drawn from one in particular, where I remember I had to tie the brachial artery. The palm of the hand was literally torn up with putrid pus and clots, rendered hard by the iron, and was simply rotten. The bleeding being practically stopped by the ligature of the main artery, I thoroughly cleansed the cavity, and lightly packed it with absorbent cotton wadding saturated with turpentine. On the second day the plug came out easily, a thin layer of healthy pus lay beneath it, and the cavity was covered with red clean-looking granulations.

In opening the urethra in the perineum, it sometimes happens that the hæmorrhage is very sharp. As often as not, it does not occur so much at the time of operation as after the patient has got warm in bed. The only remedy is plugging, and here the turpentine will be found of great service. Again' in severe operations about the rectum for extensive fistulæ, plugging is the best surgical proceeding to arrest bleeding. Sometimes, again, after large putrid abscesses have been opened, very severe hæmorrhage comes from their interior, requiring them to be packed. Now the use of perchloride of iron under these circumstances is productive at once of a great deal of pain and a great deal of mess. If you use turpentine you will find your plugs come out easily and comfortably to the patient, while the surface left behind is clean and wholesome.

The other day a man came into the ward to show himself. He had an excellent stump from an amputation above the knee, and wanted to see about an artificial leg. Some months previously he came into hospital in a deplorable condition. His knee-joint was hopelessly destroyed, and the tissues all round it were absolutely rotten, with putrid abscesses and sinuses burrowing all about it. He was delirious, with a dry tongue and a high temperature—evidently in a state of septicæmia. Immediate amputation was his only chance, and that a poor one. The actual removal was accomplished with all rapidity, only the main artery and one or two others being tied. The space between the flaps was then loosely filled with lint soaked in turpentine, and the flaps brought down over them without any stitches at all. A towel was wrapped round the limb and the patient put to bed. On the second day the anterior flap was lifted up, the turpentine was pulled out and fresh replaced. After a few such dressings the interior of the wound was quite clean, and the flaps were allowed to fall together, and trained into shape by a light wire splint. If a long time has been spent over the operation, or if the flaps had remained putrid, the man must infallibly have died, so exhausted was he at the time of operation. I have done this several times where it has been necessary to amputate through diseased tissues.

Some agents, like the perchloride of iron, are admirable styptics and some, like iodoform, chloride of zinc, and carbolic acid, are most effective antiseptics; but I know of no remedy which combines the two properties to the same extent as common turpentine, while at the same time acting as a direct stimulant to healthy granulation. The only objection that may be urged against its use is that it may be painful. Its use is attended with much less pain than would be imagined *a priori*. In the case of a clean cut wound it is painful for some hours, but its application causes no suffering at all in the case of old wounds, sinuses, or abscess cavities. The single word of caution in employing it, is to see that it does not come on the skin, which it of course blisters; and most of the pain which I have ever seen attending its use has been been caused by careless plugging, whereby the drug was left in contact with the skin.

The other evening, at a medical dinner, some friends who were very jocular about the title of my little paper as it appeared on the notice list. Turpentine and scraping, they said, had a very carpenter's shop sound about it; and pleasant suggestions were made as to a future paper on Friar's Balsam and French Polishing. But the modern surgeon, with his anæsthetics and antiseptics, is, after all, daily becoming more and more of a carpenter. Pain being abolished and healing rendered almost certain, the human body becomes little more than a block of wood which the surgeon carves. Patience and skilful cutting are the requisites of the modern surgeon.

To sinuses and chronic suppurating cavities or surfaces mechanical surgery has been most advantageously applied, in the way of scraping them clean from the unwholesome granulation tissue which covers or lines them. Many of us will remember that we first became acquaintd with this tissue under the name of the "Pyogenic Membrane," a name which in itself sounded sufficiently dangerous to prevent any rash meddling with it, and which possibly contributed to the fact that it was always very gently treated by minor caustics or stimulating lotions, in place of being clean swept away. Volkmann's spoon seems to me to be one of the most useful of modern inventions; of more real service than all the endoscopes that ever were invented. It has revolutionised certain departments of minor surgery. Let us take an instance. A man left the infirmary the other day sound and well. About a month previously he had been admitted with his buttocks riddled with holes. He was the victim of very bad anal fistulæ. He He had already been very considerably cut up by an able surgeon, but, in spite of that, more abscesses and more sinus tracks had formed, and the old cuts showed hardly any signs of healing. Many weeks had passed in this way. Immediately on admission he was anæsthetised and put in a good light in the lithotomy position. Every track was then followed out, slit up, and scraped, and every old incision scraped clean also. Finally, they were all carefully packed with turpentine lint, and left for two or three days. At the end of that time plugs all easily came out, leaving red surfaces which rapidly healed up.

By means of scraping a great future is opened out for the treatment of these most troublesome cases, strumous cervical glands. I confess that the old ideas of constitutional taint which I had been taught about strumous glands, had so firm a hold upon me that it was a long time before I could be got to appreciate the value of direct surgical attacks upon them. Syrup of iodide of iron, cod-liver oil, and a lotion of some sort was the regulation practice. But nowadays these same glands are shelled or opened and scraped with the most admirable results. From being among the most hopeless of the affections seen in the hospital out-patient department, they are now satisfactory objects of treatment. Of old the softened gland was too often allowed to burst spontaneously, the blue, thinned skin then sloughing or curling up and leaving an unsightly cicatrix—a life-long vexation to the patient if a female. But, now, so soon as a gland is soft, we cut into it, scrape it out, fill it with an antiseptic (s*a*y turpentine), and then drain it with a little tube. A mere line is all that is seen by way of mark. The sooner all such glands, when once believed to be genuinely tubercular, are either removed or scraped out the better, because there can be no doubt of the direct spread of infection from one gland to another. How often do we find one side of the neck, all the way down, a mass of hardened glands, while the opposite side is absolutely sound and free from disease! Whe*t*her it is a bacillus or not that sets up the mischief, and whether the bacillus gets into the cervical glands *viâ* the tonsils, or by way of carious teeth, are points not as yet absolutely settled. But, at any rate, the theory is a very encouraging one, and helps one to cut out and scrape out tubercular glands with a great amount of faith and hope—which is rapidly being made into certainty by enlarged experience. So that the best method of treating a softening strumous gland with which I am acquainted is as follows:—Give the child chloroform. Make a very small hole in the gland with a tenotomy knife, and introduce a small Volkmann's spoon. Scrape out everything that can be got out by scraping, and squeeze and press the cavity. When nothing more can be got out, fill the cavity with a long, narrow strip of lint dipped in turpentine, poking it through the small hole with a probe. At the end of two days pull out the lint and introduce a drain-tube. Pass a needle and thread through the tube on a level with the skin, and then slip over the tube a circular piece of plaster with a hole in the centre and having its margin nicked. Cut the tube short off and tie the ends of the thread over the plaster. The tube is thus rendered immovable. Over it may be placed a little bit of absorbent cotton wadding dipped in an antiseptic lotion, and covered in with a bit of jacquonette. After a few lessons the child's mother or nurse will learn to wash out the cavity with a syringe morning and evening aud to apply the dressing, as well as to take out the tube, clean it, and replace it every third day or so. By waiting patiently until the tube is literally pushed out of the cavity, a mere white spot is frequently the only remaining evidence of what has been done. If a depression or dimple remains it can be afterwards elevated by loosening the cicatrix from the subjacent tissues by a tenotomy knife.

In the excision of joints scraping is of the utmost value, The tedious delays which formerly rendered an excision of the knee-joint, for example, such a wearisome job, are now greatly diminished. With the curved scissors all the thickened gelatinous synovial membrane, which was bound to perish before any healing could take place, is clipped away, while every burrowing sinus is scraped clean and all suspicious places on the cut surfaces of the bones are punched out with a strong spoon, just as one would punch a decayed bit out of an apple.

The bubo, too, is deprived of many of its terrors. A gentleman came to me yesterday (Tuesday), for instance, with one on each side. From their history and appearance it was clear that they must go on to suppuration. I told him to poultice them and keep at his occupation, which he was most anxious to do. On Friday they ought to be soft in the centre. I purpose then giving him an anæsthetic, cutting them across vertically, scraping out the broken down tissue, and packing them with turpentined lint. My expectation is that he will be at work again about Tuesday with two clean granulating wounds. At any rate I have promised him so.

I feel, gentlemen, that I have perhaps taken up too much of your time over an apparently unimportant subject, but, after all, the human race derives most benefit, and the medical profession reaps most emolument, from minor surgery. Tying innominates and taking out kidney's do only a very few people any good, and are by no means remunerative performances. That the employment of scraping is common enough among surgeons attached to large hospitals is very true, but I am not addressing an audience exclusively composed of such; and I would like to see the use of so valuable a proceeding extended much further—to the country surgery, to wit, where I very well know that plenty of good, sound, chirurgical work is done, with very little fuss made over it.

ON TOPICAL REMEDIES FOR DISORDERS OF THE ANUS AND RECTUM.

By John Ward Cousins, M.D., Lond., F.R.C.S., Senior Surgeon to the Royal Portsmouth Hospital, and to the Portsmouth and South Hants Eye and Ear Infirmary, England.

During the act of defecation in the healthy condition of the bowel, the blood-vessels around the orifice are distended, and slight protrusion of the mucous membrane takes place, and, whenever the muscular tension and vascular turgescence of the part are habitually prolonged and severe, the very conditions are present which promote the development of hæmorrhoidal troubles. In cases of ordinary constipation, and prior to the expulsion of hardened accumulations, some softening or lubricating agent may with great advantage be introduced into the rectum, and for this purpose I strongly recommend a smooth and creamy mixture of boracic ointment, glycerine, and lanoline.

In relaxed conditions of the anus and rectum, with a tendency to prolapse, prolonged efforts during evacuation distend the dilated vessels, aggravate the varicose state of the anus, and increase the local distress. Straining at stool must at all times be carefully avoided. It is a good plan to get a regular action of the bowels just before going to bed, instead of early in the morning; for then, during the repose of the night, the intumescence of the organs has time to subside. Immediately after an evacuation the anus should always be washed, and the well-soaped hand is the best instrument for the purpose. Habitual cleanliness is one of the most effectual ways of preventing hæmorrhoidal disorders. The irritating secretions and mucus from the orifice of the gut are removed, and friction tends to brace up the part and empty the distended vessels. There is no region of the body which really requires so much sanitary attention; but, even in these days of hygienic enthusiasm, it is to often the last to be cleansed.

The affection commonly styled "piles" is in many cases nothing more than soreness and irritation of the anus, produced by daily neglect and local impurity. When the surrounding skin is healthy any ordinary soap may be selected for washing purposes. Sometimes the folds of skin around the orifice are swollen and irritable, and often external hæmorrhoids cause a great deal of irritation. In persons of a full habit a local erythema is very common, extending over the nates. The skin is red and moist, and by friction it becomes tender and excoriated. The disorder is generally easily cured by careful attention to the part every evacuation. I have used with great success well-washed soft soap made into a smooth compound with the alcoholic solution of coal-tar, or the oil of cade or eucalyptus globulus. After the lavement the part must be carefully dried with a soft towel, and dusted with a fine powder composed of carbonate of bismuth, oxide of zinc, and starch.

In cases of chronic gout, and in other constitutional derangements, an obstinate form of eczema attacks the anus and genital organs, and the tormenting itching which attends the disease causes persistent scratching and excoriations. Sometimes the skin becomes infiltrated and fissured in the direction of the normal radiating folds. The disorder cannot, of course, be treated apart from the constitutional condition with which it is associated; but the daily use of the soap I have mentioned is often followed by remarkable benefit. The drying powder may then be applied over the part, or a little of the boracic ointment gently rubbed in.

The local treatment of prolapsus ani and hæmorrhoidal disorders is a matter of daily importance. In acute inflammatory affections of the anus, rest in bed should be maintained, and the patient will be much relieved by sitting two or three times a day in a hot carbolized bath.

In all cases requiring washing and irrigation, I recommend the use of a very convenient contrivance. It consists of a metal pan with a deep well in the bottom, and it is supported on short legs. The patient sits on the side of this well, so that the anus and genital organs can be completely bathed. It is especially serviceable in inflammatory disorders of the bowel, and after operations for hæmorrhoids and fistula. It is fitted with inlet and outlet pipes for continuous irrigation—a mode of treatment I adopt after all rectal and perineal operations at the Royal Portsmouth Hospital, and I hope to describe its utility in these cases on a future occasion.

Whenever internal piles come down during defecation, they must always be carefully washed and returned. In prolapsus ani the protrusion should also be carefully pushed back directly after the stool has escaped. Many of my patients, laboring under aggravated troubles of this sort, have experienced much relief by using for a few weeks a bed-pan in the horizontal position. At all times the inconveniences attending the act of defecation may be alleviated by introducing into the bowel a lubricating agent to prevent undue straining, and to facilitate the escape of the motion, and for this purpose the antiseptic compound I have mentioned is admiraably adapted. The anus should then be carefully washed, and a little stimulating ointment put into the bowel to check excessive secretion, and to rouse the mucous follicles to more healthy activity. I often employ a remedy containing a little oxide or sub-chloride of mercury and a few grains of iodoform. If pruritus ani is troublesome, cocaine may also be added with much advantage.

Hæmorrhage is often a very prominent symptom in many of the common disorders of the rectum. The quantity of the discharge varies a great deal in different cases. At all times the amount of blood lost at each evacuation must be carefully ascertained. Sometimes the fæces are only smeared with spots and streaks of blood, while at other times the loss is very considerable and alarming.

Whenever free bleeding has suddenly occurred, or the drain has continued for a long period unchecked, the case is not one for mere palliative treatment, but ought to pass without delay into the hands of the surgeon.

In many cases, however, of moderate severity, the daily use of local remedies will be followed by great benefit. The same diligent attention to cleanliness after an evacuation must be practiced, and then an ointment containing the persulphate of iron should be carefully applied to the diseased surface. The fluid extract of witch-hazel is also a very efficacious remedy. When a very powerful hæmostatic is required, the persulphate may be added to the hazeline with great advantage. I generally order two drachms of this solution, diluted with a little water, to be used regularly for two or three weeks. For all cases of hæmorrhage, rest in the horizontal position after defecation is extremely desirable, as it tends to relieve the local congestion, and to promote the astringent action of the remedy.

One word respecting the value of anodyne applications. The distressing pain which attends the evacuation of the bowels in some diseases, and continues for hours after, often demands local palliative treatment. Many cases of pain and spasm of the orifice are greatly relieved by the topical use of cocaine; but, after many trials, I found a combination of morphine and cocaine more generally useful. The application of this compound sedative often acts like a charm, and quickly gives relief. The suffering caused by fissure of the anus and ulceration within the sphincter is rendered bearable by this remedy, and in recent cases I have sometimes found its use, combined with digital dilatation, rapidly followed by permanent cure, without any other surgical interference. It is invaluable in the treatment of stricture of the rectum, and it should be introduced into the bowel ten minutes before the use of the dilator. In chronic ulceration and malignant disease it can be freely employed as a palliative remedy; and, in fact, in all cases in which pain and hyperæsthesia are prominent symptoms.—*Provincial Medical Journal*, Halifax, England.

REPORT ON THE TREATMENT OF FOURTEEN CASES OF DISEASE OF THE SPINAL CORD, BY THE METHOD OF SUSPENSION.* By David D. Stewart, M.D., Lecturer on the Diseases of the Spinal Cord, and Chief of the Medical Clinic in the Jefferson Medical College; Physician to St. Christopher's Hospital for Children.

Although the treatment of locomotor ataxia by suspension was introduced in 1883, by Motchoukowsky, of Odessa, in Russia, the method received no extended trial in that country, and failed to attract notice elsewhere until the attention of Professor Charcot was directed to it last autumn. Since the date † of the publication of the latter's first lecture on the subject, the method has received such publicity through the journals that a description of it here is unnecessary. ‡

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* Read before the College of Physicians of Philadelphia, May 1, 1889,

† Progrès Médical, Jan. 19, 1889.

‡ For details, vide Progrès Médical, Jan. 19 and Feb. 23, 1889; Rev. Gen. de Clinique, Feb. 14, 1889; and the Treatment of Locomotor Ataxia by Suspension; translated from the French of Prof. Charcot, and edited by H. de Watteville, M.D., D., Stott, London.

In cord affections occurring secondarily to disease of the vertebræ this method was advocated, and practiced with good results, so long ago as 1826, by Prof. J. K. Mitchell, of the Jefferson Medical College, and has been employed for a number of years by Dr. S. Weir Mitchell * in the same class of cases. The lalter, indeed, about the time of Motchoukowsky's discovery, was induced to attempt suspension in two cases of spastic paraplegia in which no spinal caries existed; the excellent results obtained from it in pressure paralysis having led him to believe that stretching the cord, and thus altering its vascular conditions, even when signs of meningeal inflammation were absent, would helpfully affect both cord and membranes. Unfortunately, in these cases, no benefit followed; had it been otherwise, suspension would, no doubt, long since have been generally recognized as a useful adjunct to our scanty therapy in chronic degenerations of the spinal cord.

Closely following the introduction of the method into France it has been used in many forms of disease of the cord, in various forms of chronic degeneration of the nervous system, and in functional nervous trouble, such as neurasthenia; but, thus far, no report has appeared of a sufficiently extended trial in these to justify positive conclusions as to its utility. I have not, as yet, suspended more than a few times, at very irregular intervals, cases other than those of cord disease. Efforts are now being made to induce a considerable number of chronic nervous cases, which have been intermittently under observation in the out-patient medical department of the Jefferson Hospital for some time, and which, seemingly, are such as might receive benefit from this treatment, to submit to its trial. Later, a report will be made on suspension in these. The fourteen upon which this paper is based comprise eight tabetics, three cases of spastic paralysis, two of ataxic paraplegia, and one of myelitis. The following are brief histories of these:

Case I.—Locomotor ataxia; second stage.—Clement N., æt. 38 years; waiter. First seen January 23, 1880. He then had had severe lightning pains for a year or more. There had been present from about the same time incoördination of movement, especially in the dark. This was increasing. There was heightened sexual desire, with nocturnal losses, constipation and vesical incontinence. Swaying was so decided, with feet together and eyes closed, that he would fall if unsupported. He had lost twenty pounds in weight in eight months. The upper extremities were not involved. There was no eye symptoms. There were plantar anæsthesia, with delay in transmission of an impression, perverted temperature sense, and absent knee-jerk. Had syphilis in 1879.

He was placed on mercuric iodide until treatment by suspension was begun, on February 18th. The only change in his condition then was slight diminution in the severity of the pains. He has been suspended, in all, thirty-six times, usually four times a week, Monday, Wedhesday, Thursday and Saturday being the days chosen. The duration of the first suspension was one minute; the second, one and a-half minutes; the third, two and a-half minutes; the fourth, three minutes. All the subsequent suspensions were from four to five minutes, usually the latter. He was swung entirely from the ground in all the suspensions. The first three suspensions were by the head alone, but so much spinal pain was felt during them that thereafter shoulder-straps were also used, he being directed to raise and lower the arms slowly three to four times in a minute. At the fifth suspension mcrked improvement was apparent; his gait was decidedly better; static ataxia had lessened materially; the lightning pains had decreased in severity and frequency, and plantar anæsthesia had diminished.

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* Vide Treatment of Pott's Paralysis by suspension, etc., by S. Weir Mitchell, M.D *American Journal of the Medical Sciences*, May, 1889.

During the second week of treatment the pains entirely disappeared, and have not returned. Since then improvement has been gradual, though continuous, to the present. The increased sexual desire, constipation and vesical incontinence have disappeared. He is now able to walk with closed eyes; static ataxia is slight; subjective sensation in the plantar surfaces is good, and the two points of the æsthesiometer are now felt at the normal distance; temperature sense is normal; the knee-jerk has not returned.

Case II.—Locomotor ataxia; second stage.—William E. T., æt. 46 years; clerk. Had been under observation but a short time when suspension was begun. The following is an abstract of the symptoms noted the day of the first snspension: He had *petit mal* for one and a half years preceding the onset of tabetic symptoms three years ago. There then appeared lightning pains, which continued intermittently until suspension was begun. Before the first suspension they were very severe, and were aggravated in damp weather. Sexual desire was at first increased and then lost. There were constipation, alternating with fecal incontinence, and loss of vesical control. The gait is ataxic; there is staggering in the dark and in turning. Swaying is decided with feet together and eyes closed. The upper extremities are unaffected. There is decided tactile anæsthesia of the lower limbs Temperature sense is perverted. Tactile and temperature sense are decidedly delayed. Knee-jerk is absent. There are no eye symptoms. He is melancholic; attributes his disease to mental worry. No specific history.

He was first suspended February 15th, and subsequently three to four times weekly to the present; but occasionally there was an interval of several days between. The first four suspensions were entirely by the head; in the later ones shoulder-straps were used, the arms being raised and lowered as in the other cases. First suspension occupied three-quarters of a minute; the second two minutes; the third and fourth two and a half minutes, and all the subsequent ones two to five minutes, the average being three minutes. He was rarely suspended five minutes, because of severe pain always appearing in the cervical and dorsal region when the treatment was prolonged. He thinks the improvement better when the time of suspension is shorter. After the fourth suspension there was improvement in the gait, and decided diminution in the severity of the lightning pains, though the weather was bad for some time. After the seventeenth suspension, vesical and fecal incontinence entirely ceased, and has not returned. The improvement in his gait had then begun to be remarked upon by all his acquaintances.

He has now been suspended thirty-two times. There has beeu no change in his condition since the twenty-fifth suspension. It was then noted that his walk and station were far less ataxic than at first. There is a most decided improvement in his mental condition; cheerfulness has replaced despondence; he has gained strength; appetite and sleep are better than at first. The lightning pains no longer occur; rheumatoid pains are occasionally felt prior to a storm, but are of no severity. Sexual desire and capacity have not returned. Knee-jerk remains absent. There is less tactile anæsthesia in the lower limbs; sensation, however, is still delayed. He can distinguish heat and cold, but there is delay in transmission as before.

Case III.—Locomotor ataxia; second stage.—John Van S., æt. 53 years. Has been under observation for ten years. Knee-jerk has not been present during that time. Gait has been ataxic for twenty years; anæsthesia and lancinating pains have been present for the same period. There was loss of sexual power and desire, which returned somewhat for a time, with, also some amelioration in the other symptoms, under the salts of silver and potassium iodide; but, prior to the first suspension, locomotion without two canes had been impossible for seven years. The gait was typically ataxic, and there was retroflection of the knee-joints. Lightning pains were severe and constant. Tactile sense was diminished; temperature sense was normal. There was concentric limitation of the visual field with a normal fundus.

The first suspension (one-half minute) was one February 20th; the second (two minuted) on February 25th; the third (two minutes) on the 27th. Since then he has been suspended from three to four times weekly, receiving in all thirty suspensions, which, after the fourth, were of five minutes' duration. No pains occurred during them. the method was the same as in the preceding cases. The lancinating pains disappeared the day following the third suspension, and have not returned. On the day of the fourth suspension (twelfth of treatment) he appeared at the hospital without a cane, coming a distance of several miles, and walking a fair part of the way; the first time he had done without support in locomotion in seven years. Subjective sensation in the plantar surfaces was also better, and he expressed himself as feeling "like an old buck." This improvement in gait has been continuous to the present, and is remarked in wonder by his family and neighbors. Sexual power and tactile sense have improved. The knee-jerk has not returned.

*Case IV.**—*Locomotor ataxia ; second stage.*—George L., æt. 63 years; schoolmaster. Seven years ago lightning pains, anæsthesia of the lower limbs, and an ataxic gait appeared with loss of sexual desire. An examination immediately before suspension was begun showed markedly ataxic walk and station ; absent knee-jerk , decided tactile anæsthesia in the extremities; Argyll-Robinson pupil. There were girdle and shooting pains. No specific history. He was at first suspended every day for three weeks; and subsequently on alternate days. The average length of each suspension was two and three quarters minutes. There has been a very distinct improvement in gait, and inco-ördination is slight compared with what it was. The girdle sensation has disappeared, and the lancinating pains though not entirely gone, have much ameliorated. The knee-jerk has not returned, and the reflex immobility of the pupils and loss of sexual desire continue. The mental condition has improved.

Case V.—Locomotor ataxia ; first stage.—James L. E., æt. 40 years; brakeman. For several years he has had characteristic lightning pains, and recently has noticed uncertainty of walk in the dark. With closed eyes there is bad station. The gait is not ataxic. The knee-jerk is absent; no reinforcement. There is Argyll-Robinson pupil. He has been suspended four times. After the second suspension there was a decided lessening in the severity of the pains. This case came to the hospital from a distance, unprepared to remain longer than a week. A report on his condition will be made at another point, after further suspensions.

Case VI.—Locomotor ataxia ; second stage.—Mrs. M. C., æt. 48 years; general housework. Since September, 1883, she has had paralysis of the left third nerve, causing mydriasis, external strabismus, and almost complete ptosis. In 1887, locomotion became difficult, at first only in the dark, but soon in the light. She has had lightning pains for over a year, and rheumatoid pains occur in the joints, worse in damp weather. There is a constant sensation of burning and weight in the dorso-lumbar region, and the spinous processes of the vertebræ in this situation are decidedly tender on firm pressure. There are: staggering gait; inability to stand with feet together and eyes open; absent knee-jerk; pronounced tactile anæsthesia in the lower limbs, and especially in the plantar surfaces; normal temperature sense. An examination of the eye showed hypermetropia; a normal fundus; total paralysis of the left third nerve; pupils irregular in outline, responding sluggishly to light, and immobile to accommodation. The above points were noted when she first came under observation, two months before beginning suspension, and again immediately before. She had received no benefit from medical treatment.

The first suspension was on February 15th, and the last on March 30th, she receiving it in all twenty-one times, usually four times a week. The first two suspensions occupied three-quarters of a minute; the third, one minute; the subsequent ones from two to five minutes, usually the latter. The method was similar to that pursued in Case I., and the intervals were the same. The first three suspensions were accompanied and succeeded by an increase in the sensations of burning and weight in the dorso-lumbar region; this, later, disappeared, but returned occasionally while suspension was continued. The tenderness over the spinous processes, however, entirely disappeared. The shooting pains were decidedly ameliorated and station improves after the sixth suspension. The ptosis was noted to be much less at the twelfth suspension. Other than these there were no changes. Los of knee-jerk, tactile sensation, and sexual desire persisted. After a six weeks' trial she ceased to return for suspension.

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* Patient of Dr. E. P. Hershey's.

Case VII.—Locomotor ataxia; second stage.—Mrs. R. C., æt. 49 years; housewife. The following points were noted shortly prior to beginning suspension. Has had characteristic lightning-like pains for fifteen years, and for the past six years an ataxic gait; sensations of numbness from the waist downward; a girdle pain, and absent sexual desire· There were present very bad station; absent knee-jerk; decided tactile anæsthesia in the lower extremities, but normal temperature sense. There were Argyll-Robertson pupil and beginning atrophy of the left optic nerve. Because of being light in weight, she was suspended by the head alone.

The duration of each suspension varied between three-quarters of a minute to four minutes. She was suspended in all ten times. At the visit for the fifth suspension it was noted that her gait and station had decidedly improved; she felt stronger physically, was in better spirits, and had little or no pain. After the sixth suspension the ataxia had lessened so considerably that she presented herself for the seventh suspension (the thirteenth day), walking entirely without support—for the first time in several years. The improvement in gait and station and the lessening in the pains were maintained; but at the date of the ninth suspension there was no return of knee-jerk, and tactile and sexual anæthesia remained. The eye symptoms were unchanged. She complained of having trouble at home, and of being much overworked, and did not return for treatment after the tenth suspension—why, I am unaware, as she stated at the last visit that she was much gratified with the improvement.

Case VIII.—Locomotor ataxia; second stage.—Mrs. K. M., æt. 45 years; housework. The following symptoms were noted just prior to beginning suspension. Has had generalized neuralgiform pains for twelve years, with occasional lightning-like pains down the thighs. Has been somewhat ataxic for a number of years. There are decided static ataxia, absent knee-jerk, paræsthesiæ in the lower limbs, diminished and delayed tactile and temperature sense in the plantar surfaces, absent sexual desire, Argyll-Robertson pupil. She was suspended in all eight times, and then was forced to discontinue her visits because of contracting a severe cold. At the time of the last suspension the only improvement noticeable was in the ataxia. The walk was normal and there was far better station.

Case IX.—Primary spastic paraplegia.—Henry S. A., æt, 37 years; cake-baker. Eleven years ago there gradually appeared weakness in the lower limbs, with rigidity and tremors. For several years has been totally unable to walk without crutches. Immediately prior to beginning suspension it was noted that he could not walk more than a few steps with them. The gait was typically spastic and the limbs shook as he progressed from the clonus produced as the ball of each foot rested alternately on the floor. The lower limbs were rigid; the knee-jerk was much heightened, ankle clonus was very decided, and there was a general increase in the tendon and periosteal reactions. Sensation was normal; coördination, also, as far as it could be tested. There had been obstinate constipation for years, and, occasionally, rheumatoid arthritic pains.* No specific history.

Suspension was begun on February 25th, and continued four times weekly until March 25th, when he returned to his home in Camden. Though compelled to depart, he was so unwilling to abandon a treatment which seemed to be productive of so much good, that he purchased an apparatus and has suspended himself daily from March 26th.† Allowing for psychical effect—for he has become a decided enthusiast on the method—the improvement in his condition has been marked. The day following the second suspension he stated the limbs felt less stiff, their movements were freer and more under control, and that locomotion with the aid of crutches was less difficult; this at the time of the fourth suspension, was apparent to myself and others who then saw him. There were less spasm and rigidity and the gait had improved. Coldness of the feet had been constantly present before suspension was begun, but disappeared after the first hanging, and has not returned. He recently wrote to me, in reply to an inquiry as to his condition, that he had discarded his crutches and now goes about the house readily enough with the aid of two canes; that he stands without fear of falling, and that there is freer movement in the feet and less tremor and spasm in the limbs than there has been for ten years.

Case X.—Primary spastic paraplegia.—Geo. F., æt. 38 years; shopkeeper. Five years ago the lower limbs became gradually weak, easily fatigued, and were the seat of stiffness and occasional spasm. A typical spastic condition is present. The walk is spasmodic, the knee-jerk much exaggerated, and there is a decided ankle clonus. There are no disturbances of sensation or coördination. The pupils are normal. There is beginning atrophy of the right optic nerve. He had syphilis seventeen years ago. He has been suspended thirty-four times; method, duration, and intervals, the same as in Case I. There has been no decided improvement in his condition. After the seventh suspension he stated he had begun to feel in higher spirits and ate and slept better. He thought the limbs were not so weak and rigid as formerly. I, however, noticed no difference then, but, on examining him the day of the tenth suspension, there seemed less spasticity and his walk had improved, but the tendon reflexes continued exaggerated as before. Since then the improvement in gait has not been marked. There is now, however, much less fatigue felt in the legs than formerly and less tendency to spasm. The knee-jerk continues heightened, but the foot clonus is less easily elicited and is feebler.

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* It is interesting to note that, when he first presented himself for treatment, one and a half years ago, and was under observation one week in the wards, his occupation and the eliciting of the last mentioned symptoms, caused me to suspect lead poisoning. His urine was then examined by Prof. Leffman, who reported that it contained considerable lead.

† He has now had forty-five suspensions.

Case XI.—Primary spastic paraplegia.—Samuel G., æt. 53 years. A year ago there gradually developed weakness and heaviness in the legs and a tendency to jerking of the muscles. Several attacks of colic preceded the appearance of these symptoms. There is weakness in the legs on slight exertion and the gait is slightly spastic ; the knee-jerk is increased and a clonus can be produced in the left ankle. Tactile sensation and coördination are unimpaired. There are no electrical changes and no specific history. There is atrophy of the left optic nerve. He was suspended thirty-four times ; the method, duration intervals, etc., were the same as in Case I. There has been no improvement in his condition, save that he has lost a feeling of nervousness and dread that was very prominent before suspension was begun. This disappeared in the second week.

Case XII.—Combined lateral and posterior sclerosis.—Henry S., æt. 40 years ; shuttlemaker. He visited the clinic once, five years ago, in search of a diagnosis. The following points, with others, in his history, were then noticed : Staggering gait ; left knee-jerk much increased ; incoördination ; cannot walk or stand without assistance ; impaired grasp, both hands ; shooting pains in the extremities ; pruritus ; constipation ; incontinence of urine ; normal tactile sense ; double optic neuritis ; loss of color sense ; peripheral vision better than central ; no specific history. He was recently invited to present himself for suspension. Additional points noted at the date of the first suspension are, that the first symptoms appeared ten years ago, and were those of combined lateral and posterior sclerosis. There is now present a spastic gait ; inability to walk or to stand unsupported ; rigid limbs ; much exaggerated knee-jerk ; very decided ankle clonus ; pronounced incoördination in both upper and lower extremities ; normal tactile and temperature sense ; unimpaired sexual power ; chest pains ; constipation ; no bladder difficulty ; advanced double optic atrophy and limitation of the visual field ; pupils normal in size, and immobile. He received nine suspensions. At the time of the third suspension he felt decidedly stronger and better ; limbs were more supple ; had walked more in the two preceding days than for three or four years. The fourth and fifth suspensions caused severe pains in the back and limbs, and slight faintness. After the ninth suspension he abandoned the treatment, believing that the distance he was compelled to travel to be suspended overcame any benefit he received.

Case XIII. Combined lateral and posterior sclerosis.—John S., æt.

thirty-one years; miner. Has had lightning-like pains in the extremities, more or less constantly, for three and a half years, and dull aching in the lumbar and sacral region. Motor weakness and incoördination in the legs, with stiffness and tremors, appeared shortly after the onset of the pains, and are increasing. He is unable to walk with closed eyes. The gait is slightly spastic. The leg muscles have dwindled. There is slight plantar anæsthesia and delay in the transmission of a tactile impression. The knee-jerk is very active; ankle clonus is pronounced. The arms are normal. There is no bladder or rectal trouble. Sexual power impaired. No specific history. He believes the disease was induced by constant exposure to wet cold. He was suspended six times, and then returned home. Subsequently, without my knowledge, he used suspension on alternate days for six weeks, and he now writes that he has but slight pains, and that locomotion is "almost as good as ever."

Case XIV.—Subacute dorso-lumbar meningo-myelitis—John B., æt. twenty-nine; miner. In March, 1888, five weeks after a fall upon the buttocks, in which he felt himself much shaken, there appeared difficulty in locomotion; lancinating pains in the course of the ilio-hypogastric and ilio-inguinal nerves, and in the thighs, which continued constantly for several months. The pains were of great severity, and necessitated the frequent hypodermatic use of morphine for their relief. In August, the loss of power became absolute; he was then unable to walk, even with crutches. I saw him first on February 28, 1889, when he was brought to the hospital for treatment. There was then total paraplegia. He could not maintain the erect posture, though held by two men. The legs and thighs were somewhat wasted; a spastic condition was developing, and reaction of degeneration had appeared in the anterior thigh muscles. The spinous processes of the first and second lumbar vertebræ were decidedly tender on pressure, and the vertebral points below this were slightly so. There was marked diminution in tactile perception in the lower limbs; the two points of the æthesiometer being felt as one at their greatest separation. Heat and cold applied to the plantar surfaces seemed equally hot, and the touch of a feather produced a burning sensation. A very faint plantar reflex was present, but no gluteal or cremasteric. Knee-jerk was just perceptible on the right; a trifle better on the left, but much enfeebled. A hot sponge drawn down the spine showed a hyperæsthetic zone in the lower dorsal region.

Suspension was begun on February 28th. The neck and shoulder straps were used. He was always drawn entirely from the floor, and the arms were raised and lowered at intervals, as in the other cases. The first suspension occupied one minute; the second three minutes; the fourth four and a half minutes; all the subsequent ones five minutes. He has now received thirty-one suspensions, and the improvement in the paraplegia has been remarkable. After the second suspension he was able to stand with crutches, and, at the time of the fourth, he got about the wards with their help, and since April 1st (eighteen suspensions), he has been able to walk a short distance with the aid of one cane. The rigid condition of the limbs has lessened, and their nutrition is better. The tenderness over the lumbar vertebræ had entirely disappeared by the latter part of March. Pains occasionally appear in the interval of the suspensions in the course of the ilio-inguinal and ilio-hypogastric nerves, but are always dispersed by a suspension. The knee-jerks are somewhat more active than normal. The plantar reflex has improved; the gluteal and cremasteric remain absent. Anæthesia in the plantar surfaces has lessened very materially.

The total number of suspensions made in these cases is upwards of 352. An extended analysis of the results obtained is unneccessary. It may be seen by a glance at the histories, that in the tabetics, the symptoms which were first and most strikingly relieved were the ataxia and the lancinating pains; improvement in these occurred in all,* and after a very few suspensions; and that, if any relation existed between the early appearance and extent of the improvement and the duration of the disease, it is a direct one; the more chronic cases being those most promptly and decidedly benefited. The improvement in these two symptoms, the most prominent and distressing of the disease, in at least two of the cases (III. and VII.) was so prompt and decided that it may well be considered truly remarkable.

Bladder and rectal difficulty, present in two of the tabetics, and increased sexual desire, present in one, have disappeared. Diminution in, or loss of, sexual desire, present in five, has improved in but one. Tactile anæsthesia has much improved in three, and slightly in one; not at all in four. A somewhat melancholic condition, present in five of the tabetics, disappeared after a few suspensions. This was not due directly to the suspensions, but was rather secondary to the lessening of the pains and ataxia. In none of the eight has the knee-jerk returned, even with reinforcement.

In the three spastic cases, diminution in the paralysis, rigidity, and spasm has been striking in one and slight in another; in the third, no change has occurred in these symptoms.

In one of the ataxic paraplegic cases, ataxia and paralysis seemed to be lessened after the second suspension. Unfortunately, this improvement was not maintained, possibly because suspension was not persevered in. The other case writes me that there has been marked improvement in gait and pains.

In the case of myelitis, the improvement in the paraplegia and in the general condition has been decided.

Eye symptoms, where present in the fourteen, have undergone no change.

As these cases are few in number, and have been under treatment by suspension but a comparatively short time, no very definite deductions can yet be drawn as to the exact value of this method in the treatment of degenerative and inflammatory diseases of the cord. It may, however, be safely asserted, from the favorable results obtained in nearly all of the tabetic cases, that suspension is of great service in locomotor ataxia, but whether palliative merely, or actually curative, the time has not arrived for definite reply. It is certainly of use in lateral sclerosis; and, in myelitis, the decided improvement produced in one case, in which absolute paraplegia had existed for over six months, commends its trial in others. That suspension will, even though aided by wisely directed medical and hygienic means, effect a cure in degenerative disease of the cord is, I think, doubtful; but as an adjunct to other modes of treatment, its utility is beyond question.

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* No pains were present in Case VIII. while under treatment by suspension.

The recent plausible explanation as to the action of suspension in tabes, offered by Althaus,* indicates that permanent benefit may result from this method, provided that the further progress of the disease can be arrested by other means, and that it has not advanced to complete destruction of the nerve tubules; and that, even where its advance cannot be thus stayed, temporary good may still be accomplished by suspension. Althaus's ingenious explanation applies equally to other generative diseases of the cord than tabes, and if it is true of the chronic degeneration in which the pathological changes originate in the nerve elements and the overgrowth of connective tissue is secondary, it is, theoretically, far more so of inflammatory processes which, starting in the connective tissue, cause, primarily at least, far less damage to the nerve tubules. In chronic inflammations of the cord or its investing membranes, which are stationary and are encountered before the contracting perineural tissue has, by compression, done more than to interfere with the nutrition and conductivity of the fibres, not irreparably damaging their structure, the effect of suspension should be curative; for, by stretching the cord and the thickened and adherent membranes, the inflammatory tissue pressing upon the axis-cylinders will be loosened and broken down, setting free the latter, and permitting them to resume their functions.

CASES OF LAPAROTOMY FOR ACCIDENTS OCCURRING IN THE REDUCTION OF HERNIA* By A. T. Cabot, A.M., M.D.

In a paper read about a year ago I reported cases illustrating some of the accidents which may attend the return of a strangulated loop of bower to the abdominal cavity, and pointed out the importance of at once performing laparotomy when serious symptoms follow or persist after the reduction of a hernia.

During the past summer I have had two cases which still further emphasize the importance of this practice, and which I will briefly report.

Case I.—Patrick H., æt. about sixty years, entered the Massachusetts General Hospital with the following history.

The patient had suffered many years with a right femoral hernia which he had always been able to reduce himself. Two days before entrance at the hospital the hernia came down, and his efforts to reduce it that day were unavailing. During that night he had a good deal of pain, and the following day, after several unsuccessful and rather violent attempts, he finally succeeded in returning the hernia to the abdomen. He was at once seized with abdominal pain, much more severe than what he had felt previously, and this persisted up to the time of entrance.

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* *Lancet*, April 13, 1889.

*Read before the Boston Society for Medical Improvement, March 25, 1889.

When he arrived at the hospital twenty-four hours after the reduction of the hernia, he was in a much collapsed condition, with pinched, gray face and anxious expression. He had no severe vomiting, but occasionally gulped up a little bitter fluid. He was suffering much general pain through the abdomen, which was considerably distended, tympanitic, and universally sensitive to pressure. His pulse was rapid, irregular, and thready, and his respirations were forty in the minute. There was no tumor at the sight of the old hernia.

The diagnosis made was of rupture of the intestine during efforts at reduction and a consequent general peritonitis. Laparotomy was advised as a last attempt to save his life. This was agreed to and at once carried out.

The incision was made directly upwards from over the sac on to the abdominal wall. The sac was found empty and the peritoneum was quickly opened up. At once there was an escape of much fluid, containing great clumps and masses of purulent fibrin, but having no fecal or unpleasant odor.

The patient did not bear the ether well, and although but a few minutes had been occupied, he was becoming rapidly more and more collapsed.

Under these circumstances it was thought unwise to prolong the operation by hunting for a perforation, which, from the absence of fecal constituents or odor in the effused fluid, was presumably small.

The abdomen was irrigated with hot water, which washed up several handfuls of clotted and purulent fibrin from the pelvic cavity. A large drainage tube was introduced to the bottom of the pelvis, and the wound was closed.

In spite of every effort to overcome the condition of collapse, the patient did not rally, and died about three hours after the operation.

A partial autopsy was allowed. After a long search a minute perforation was found in a little congested coil of small intestine which lay at the bottom of the pelvis. The purple color of this bit of intestine showed that it was the part which had lain in the hernial sac, and the opening was so placed that the drainage tube might have been expected to have furnished a sufficient outlet for any intestinal contents subsequently escaping, had the patient rallied from the collapsed state into which he had fallen.

This case is a good illustration of the rapidity with which a fatal ssue may follow peritoneal injury and inflammation, The intestinal esion was of a kind that could have probably been remedied, had the operation been reached at a time when the patient still retained a fair degree of strength. The result shows that in these cases a delay of a few hours may change a remediable condition into a fatal one.

This patient is also an example of the bad effects of violent and ill-advised efforts at taxis even in a reducible hernia.

Case II.— Undescended testicle with left inguinal hernia: reduction *en bloc*; laparotomy; recovery.

Charles R., æt. 27 years, entered the Massachusetts General Hospital July 17th, 1888, with the following history:

The patient had always had an undescended testicle on the left side, the organ having been arrested in its descent just outside of the inguinal ring in the groin. For many years he had also had a hernial protrusion through the same ring, and this had troubled him several times by being for a time irreducible.

On July 14th (three days before entrance) the hernia was down and caused discomfort. It did not go back easily, and was finally reduced with some difficulty under ether.

When he recovered from etherization, it was found, however, that his symptoms were rather aggravated than relieved. He still had abdominal pain, especially in the left side; and the vomiting continued persistently and presently became fecal in character.

When he entered the hospital there was nothing to be felt in the abdomen or in the inguinal region, and the left testicle could not be found.

The continuance of symptoms of strangulation made it clear that constriction of the bowels still existed somewhere, and a laparotomy was advised.

This being agreed to an incision was made from over the sac of the hernia, upwards onto the abdomen. On laying open the sac it was found empty, but following it up through the inguinal ring, a dilatation of the upper part of the sac was found inside the abdominal wall; and this contained a purple loop of intestine.

The neck between the upper part of this hour-glass-shaped sac and the peritoneal cavity was formed by a thick band of fibrous tissue which represented the true neck of the sac and which would easily admit the end of the finger. It would have been amply large to allow of the return of the hernia, had it not been blocked by the testicle, which lay across the opening and closed it as by a valve.

The more the intestine was pressed up from below, the more closely did it force the testicle into the ring and close it. On relaxing the parts and pulling down upon the sac so as to draw the testicle away from the orifice, the bowel slipped up quite easily.

A further examination was made of the contents of the abdomen to make sure that no other construction or injury of the intestine existed, but nothing was found.

In closing the wound, the neck of the sac was drawn together by encircling stitches for a distance of an inch and a half to two inches, and care was taken that the uppermost stitches should be well within the abdomen, so that no depression should be left on the peritoneal side of the ring.

The patient was entirely relieved of his symptoms and made a rapid and good recovery, leaving the hospital well on August 8th, twenty-two days from the time of entrance.

This man was heard from in February, 1889 (six months after the operation), and he then wrote that although he had worn no truss, there had been no return of the hernia. He says in this letter, "I sometimes feel a smarting, burning feeling if I work very hard or lift anything very heavy; this is all."

In this case we had a rather rare complication of hernia, and a good example of the difficulty that an undescended testis may cause. It adds one to the many cases illustrative of the importance of a prompt laparotomy when symptoms of strangulation persist after the seemingly complete reduction of a hernia.

One point noticed in this last case may be of practical importance in guiding us to the proper application of taxis under similar conditions.

As has been described, the testicle lay against the opening through the neck of the sac, and closed it as by a ball valve. The more the pressure from below, the more complete was this closure of the ring, so that the effort to push the bowl up made the obstacle even greater. When, on the other hand, the part of the sac which lay in the scrotum was pulled downwards it drew the testicle, which was attached to the wall of the sac, away from the opening, and the bowel easily slipped up by it.

In a similar case, during taxis, it is quite probable that by pulling forcibly down on the scrotum the testis might be held away from the ring and the return of the hernia thus be rendered possible.

From what was seen in this case, it seems a proper rule, that in a hernia complicated by a testicle retained in the region of the inguinal canal, if strangulation occurs, every effort should be made to draw down the testis by pulling on the lower part of the tunica vaginalis. And after the hernia has been restored to the abdominal cavity, the reduction shall not be considered complete until the testicle has again, by traction on the scrotum, been drawn down to its old resting-place, where it can be distinctly felt. In this way the danger of a reduction *en bloc* with the testis still occluding the neck of the sac will be made less probable, if not wholly avoided.

ORIGINAL ABSTRACTS.

By L. Kirkland Ruffin, Norfolk, Va.

On the Pathological Relationships of Uterine Displacements. Being the Annual Oration delivered before the Hunterian Society. By G. Ernest Herman, M. B., Lond., F.R.C.P. From the *British Medical Journal,* June 1, 1889.

The speaker limited his remarks to the functionally active uterus which, except for the displacement, is healthy, or nearly so; which is movable and not deformed by morbid growth or surrounding inflammatory adhesions; which is capable of menstruation and of pregnancy. In thus limiting his subject he puts aside uterine flexions, for he knows of no morbid effects from flexion of the uterus except when it is thinned by senile atrophy, or held firm in a bent position by adhesions. From a clinical standpoint cases of uterine displacement form a group in which there are extreme cases and cases intermediate between the extremes whic h are constantly met with. He then sketches two extreme cases—one, a robust woman, in whom there is entire prolapse of the vagina and uterus, where the mucous membrane is dry and scaly, and hanging between the thighs and ulcerated in places. In this woman there are only local symptoms which are almost entirely relieved when a support is provided that keeps the inverted vagina somewhere near it's proper place. The other—a pale, delicate, anæmic woman, who cannot eat or sleep, is nervous and low-spirited and suffers from headache and constipation. She suffers from pelvic aching and bearing-down pains much like the last patient; but, unlike her, there is no protrusion. Upon examination, all that we can find is that the uterus is rather low down in the pelvis, with its body reclining backward, and when she strains the whole pelvic floor and uterus descends more than it does in the healthy woman. Both of the patients have this sink in common, that after sufficient recumbency the pelvic aching, etc., disappear, and that they are both relieved by a support which props up the descending part. The first case is simple as to its diagnosis and treatment, and comparatively simple as to its pathology. The second is difficult in all respects, and probably every specialist would take a different view of the case.

The speaker again gives his opinion that flexion in a functionally active and movable, though displaced, uterus is of no importance—not more so than the bends of a varicose vein.

He uses the following apparent paradox: Uterine displacements are not diseases of the uterus. They may be classified for convenience as uterine diseases, just as cerebral hæmorrhage is classified among nervous diseases; whereas it is primarily a disease of vessels and not of nerve tissue. So uterine displacement is not a disease of the uterus, but of the muscular and fibrous tissues which support the uterus and its place in a pathological nosology is with diseases of muscular and fibrous structures generally.

If asked what are the structures which support the uterus, we cannot go further, if we keep within the limits of our knowledge, than say that it is supported by the pelvic floor as a whole, for we cannot isolate the part taken by each individual muscular bundle and sheet of fascia. The pelvic floor is mainly muscular and the great muscle in it is the levator ani. The uterus is, in fact, a part of the pelvic floor. The pelvic diaphragm is split into two valves by a slit, and the uterus is set in the top of this slit, and tends to slip down into it when the pelvic floor is weak.

The pelvic floor has to continually sustain the intra-abdominal pressure which is much increased by exertion, and slight or absent in the recumbent position. If the pelvic floor is not strong enough to sustain the pressure it gives away at its weakest point, and this is the slit at the top of which lies the uterus; and so the uterus is displaced. If this is true, then the causes of uterine displacement are the causes which make the pelvic floor weak.

Variations in the origins and insertions of muscles in different subjects differ, and consequently the relations of these parts to one another differ. On account of the difference in the abdominal rings one man is more apt to have hernia than another ; one is more apt to have strangulation, etc., etc. Variation occurs in other parts than the inguinal canal. In some women the uterus comes down more easily than in others. We sometimes see complete inversion of the vagina in a young virgin otherwise healthy who has never done any very laborious work. It is hard to account for such a condition except by the assumption of a congenital malformation. Such a case, as to its pathology, is strictly comparable to a large scrotal hernia in a young man, and there is a resemblance in the general character of the symptoms which in these cases are, as a rule, local only.

The structure of the pelvic floor may be altered by injuries received during parturition, and it is a well known fact that women who have had children are more liable to prolapse than those who have not.

In drawing this comparison with hernia, the analogy even holds good in cases of strangulation. The difference is only one of degree. When the cervix uteri is protruded from the vulva it is the rule to find it blue, swollen, ordinatious and ulcerated. Strangulation does not produce the dangerous suspension of function, but we do see obstruction to the circulation from compression by the boundaries of the orifice through which the protrusion has taken place. Further, a very small hernia may get strangulated, likewise a slight displacement of the uterus may lead to considerable interference of the circulation through it. The disposition of the pelvic peritoneum varies quite as much as—indeed, a good deal more than—the anatomy of the inguinal regions.

The proper place, then, in a pathological nosology, in which some cases of uterine displacements should be put, is among the hernias—that is, in a class primarily due to abnormal anatomical formations. Cases of great prolapse belong to this class. These cases have features in common : they are clinically quite simple. There can be no difference of opinion as to diagnosis and little as to treatment. The treatment is not ideally successful, for it merely substitutes a greater by a lesser inconvenience. Local treatment alone is quite sufficient, and nothing but local treatment will do.

So much for the major displacements, now for the minor or even doubtful ones with many symptoms. He supposes most practitioners have met cases with histories like the second one given above in which, although the local symptoms which go with prolapse are present, yet there are also many others—disturbances of digestion, of the nervous system, of the circulation, etc ; and minor changes in the pelvic organs, besides a slight change in the position of the uterus. Thus, for instance, not only is the uterus retroverted, but the cervix is eroded, and the ovaries tender. Here there may be two very opposed views—the one that the uterine displacement is the cause of the whole malady ; the other, that it may be wholly left out of account. Diagnosis and treatment would probably vary with each practitioner. Now, some of these troublesome and complex cases have this in common : that when a support is used which prevents the uterus from sinking down, the patient is relieved. If the support is permanently used and any other necessary treatment carried out, the patient finally gets well and can do without her support though the uterus may be almost in the same position as when treatment was begun.

He considers these cases essentially similar to certain other diseases of the muscular and ligamentous structures—as weak spines, the slighter cases of lateral spinal curvature, weak knees, and the slighter cases of knock-knee, weak ankles, and the slighter cases of flat-foot. Uterine displacements, at least in their slighter cases, might be very properly collectively called "weak pelvic floor." These diseases all consist in a yielding of muscular and ligamentous tissues, and each occurs at a time of life when strain coincides with weakness. They begin usually about puberty when increased activity and diminished repose go with increased weight of body and increased strain on the nervous system. Flat-foot and knock-knee occur in the male because work involving much strain on the feet and legs is done by men and boys. Lateral spinal curvatures occurs especially in the female, and, though some cases are due to rickets in early life, yet no one doubts that many are due to muscular weakness. The different opinions as to the proportion of cases is due to the difference in nomenclature. One surgeon calls a case incipient lateral curvature ; another, only a weak back. There are cases of all degrees between merely a weak back and a prominent curve which every one could see. Chronic back-ache is very common in women and is generally due to muscular weakness, but it is often due to pelvic disease or a combination of them both.

The speaker does not maintain that the parallel between curvature of the spine, knock-knee, flat-foot and uterine displacements holds good between the conditions compared in all their kinds and degrees. Points of resemblance might be found in extreme cases. Many morbid processes are alike in their beginning, but very different in the end. All these diseases are alike in this : that they occur in the weak and not in the strong, and that they are often accompanied by functional failings of various kinds, but alike in being manifestations of debility. The symptoms are alike in general character, although there are local differences. The diseases present a general resemblance as to their course and treatment.

1. They are essentially similar in their conditions of origin. The strain which causes the deformities in the male and the lateral curvature of the girl comes about the age of puberty when there is need for an increased amount of work, whereas the strain that produces uterine displacements comes later in life for the increase of pressure due to growth is insignificant as compared with the increase of pressure which pregnancy brings. But the increased pressure is not the only cause ; there is also loss of tone in the muscles primarily due to the weak nervous system. When the nervous tone is lowered, not only are the muscles weakened, but painful sensations resulting from their tension are sooner felt. In the case of uterine displacements, not only is the pelvic floor exposed to pressure during pregnancy and stretched and torn during delivery, but after delivery the drain of the milk, disturbed sleep and anxiety in caring for the child, etc., tend to still further lower nervous tone.

All these diseases are alike in this : that they are due to conditions of debility which lead to relaxation of muscular and fibrous structures. The analogy goes even as far as the cause of the debility which is often the excessive expenditure of energy called for by the function of reproduction. While this strain is, of course, much more heavy on woman, causing uterine displacements, still men do not escape entirely, for during adolescence the premature and excessive exercise of the sexual organs is one, if not the chief, among the conditions leading to muscular weakness.

2. These diseases are alike in their accompaniments. The large majority of the cases of the minor uterine displacements complain of the symptoms of atonic dyspepsia, headaches, disturbed sleep, failure of memory, nervousness, neuralgia, hysterical seizures, etc., etc. In lateral curvature we often find the same state of affairs.

3. The symptoms of these diseases are alike in general character. Over-stretching or fatigue of muscular or ligamentous structures produces in them a continuous aching, not a sharp paroxosmal pain ; and this aching more or less quickly subsides when the strain is taken off. This is the case both in minor uterine displacements and in lateral spinal curvature.

4. These diseases have a general resemblance in their course If they persist long and the causal conditions remain in operation, the mechanical changes go on to the production of extensive deformities. But if they are early properly treated the condition will improve. If the deformity or displacement be slight, the patient may regain perfect health, notwithstanding that the slight deformity or displacement remains.

5. There are other features about all these disorders which they unfortunately have in common. One of these is that it is very difficult to distinguish slight cases of these forms of ill-health from other slight ailments due to different causes. There are many cases in which one surgeon will declare orthopædic appliances necessary, while another will think them hurtful.

6. There is another feature which these diseases have in common Although symptoms accompany the deformity or displacement, they do not depend upon it, but upon the debility which occasions the alteration in the shape of the part. It is the over-stretching of weak muscles and ligaments and the effect of the over-stretching on an over-sensitive, nervous system that constitutes the patient's suffering. If the nervous system be strong the same strain thrown on the same ligaments and muscles produces no complaint.

Briefly, to recapitulate the purport of this address. Some conditions of the uterus, commonly spoken of as displacements, are not morbid conditions ; these are flexions of a uterus which is free to move, and has walls of natural thickness and lateral deviations of the uterus. There are other displacements which are produced by tumors, or by adhesions, and these are quite subordinate to the condition which causes them, and are irremediable. Of cases in which displacement of the uterus is the only, or the chief, local change, some are analogous to herniæ. Their symptoms warrant a belief that they depend upon a particular anatomical formation, just as hernia does. Like hernia, their symptoms are local, and their treatment is mechanical. These are the major displacements. They begin as minor ones, and, if they are not treated, increase—just as hernia is at first small—and, if not treated, gets large. They occur in the strong as well as the weak.

There are other cases in which the displacement is very slight and the symptoms very numerous. The symptoms are referred to many parts of the body, but the local symptoms are the same as in the former class. These are due to weakness and over-stretching of the muscular and ligamentous structures which support the uterus. This is due to a condition of debility allied to that which produces lateral curvatures of the spine, knock-knee, flat-foot, failure of sight from hypermetropia, etc. It may be successfully treated without mechanically supporting the uterus, although mechanical support of the uterus often gives relief. The symptoms are not due to the displacement itself, but to over-stretching of the sensitive tissues. The weakness and sensibility of the tissues is due to nervous exhaustion, and when this has been cured the symptoms will disappear though the displacement be the same. In all these conditions the nervous exhaustion is often due to the strain upon nervous energy connected with reproduction, although it may be due to other causes. Lastly, the medical profession can do much good in helping to prevent these diseases by urging that in education healthy physical development shall be given its proper place.

THE INFECTIOUSNESS OF TUBERCULOSIS: A STATISTICAL STUDY.

By Lawrence F. Flick, M.D., Phila. From *The Medical and Surgical Reporter*, June 8, 1889.

The fifth ward of the city of Philadelphia has an area of .321 of a square mile, has a populatiou of about 16,000, and contains about 3,000 houses. The people are mostly poor ; about 20 per cent. are colored, and there are many foreigners, but in no part of the ward is there great overcrowding.

During the twenty-five years preceding 1888 about 15,000 deaths were returned from the ward under the various terms for tuberculosis and they occurred in about 950 houses, or about 30 per cent., of the whole number of houses in the ward. Deaths from marasmus and other erroneous names for tuberculosis, and which are really due to tuberculosis, are not included in the 15,000, but as they occurred chiefly in the infected houses, this number does not materially alter the results, and 30 per cent. may be accepted as approximately correct.

During the year 1888 there occurred in this ward 103 deaths, which may be plausibly ascribed to some form of tuberculosis. Of this number 20 died in institutions, some of whom had died outside the ward. Deducting this 20, we have 83 left. Of these 83 cases, 48 were returned as having died in infected houses—that is, houses in which a death from some form of tuberculosis had occurred within twenty-five years; and 35 in non-infected houses. Of the patients dying in infected houses, 23 were returned as dying of phthisis under its various names; 10 as of marasmus; 5 as of meningitis; 2 each as of tabes mesentrica, inanition, and hæmoptysis; and one each as dying of tuberculosis, asthma, empyema, and consumption of the bowels. Of the persons who died in non-infected houses, 21 were returned as dying under the names for phthisis, 5 under that of marasmus; 3 under hæmoptysis, 2 each under those of meningitis and inanition; and one each under chronic bronchitis and consumption of the bowels.

Of the 23 infected houses from which a death from tuberculosis of the lungs was reported, 18 had had a death from tuberculosis in them within 10 years, 14 within 7 years, 12 within 4 years, and 8 within 2 years. Of the 10 infected houses from which a death from marasmus was reported, 9 had had a death from tuberculosis in them within 10 years, 8 within 7 years, 7 within 5 years, 4 within 1 year. Out of the 48 infected houses in which deaths from tuberculosis occurred during the year 1888, 32 had had deaths from tuberculosis in them within 10 years prior to 1888. In spite of many sources of inaccuracy, these figures point unmistakably to the fact that tuberculosis is not only contagious, but that a house in which that disease had existed, remains a centre of infection for an indefinite time. Upon no other theory can we explain the fact that considerably more than one-half of the deaths from tuberculosis during the year 1888, occurred in houses which had been infected within the previous 25 years, whose number is less than a third of all the houses in ward. The conclusion that houses once infected by tuberculosis retains this infection for some time, is strengthened by individual cases. L. M. lived in the house in which she died for many years. A person, not a relative, died from consumption in the house in 1887. She took the disease in an acute form and died in 1888. H. M., suffered from chronic tuberculosis diarrhœa, and died from it during the year 1888. During the same year there occurred a death from marasmus in the same house. He gives many similar examples. He regrets the many sources for inaccuracy, but thinks we can draw many interesting and correct conclusions from this information.

SURGICAL INTERFERENCE IN FRACTURE OF THE SPINE (an address delivered in the Section on Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, by N. P. Danbridge, M.D., Chairman of the Section). From the Journal of the American Medical Association, July 13, 1889.

The speaker chose this subject because of the recent impetus given to it by the achievements of Horsley, Macewen, Abbe, and others, and because he thought it would soon be a field for new surgical triumphs or failures. Therefore he thinks it especially necessary to record past experience in order to guard against rash and unreasonable interference which would necessarily retard true progress. He draws no sharp distinction between fracture and dislocation, but considers alike all forms of injury to the column resulting in more or less damage to the cord. He then considers how far the different diseases are analagous, in order to see how far deductions from one class can be applied to another. He speaks of Horsley's case where all the symptoms of advanced transverse lesion of the cord entirely disappeared after the removal of a tumor which pressed upon the cord. Removal of a tumor which presses on the cord is the one only resource, the only treatment which promises any benefit. In Pott's disease the conditions are somewhat the same, but we all know how suddenly serious and threatening symptoms disappear spontaneously or after the use of a plaster jacket or of iodide of potassium.

But in some of these cases organization of inflammatory products and the thickening of tissue reaches such a degree that it amounts to a tumor, and can only be removed by the use of the knife. Charcot has shown that this condition is apt to be opposite to the point of greatest curvature, and Macewen has had brilliant results from operative interference in just such cases which had resisted all other methods of treatment. Ten cases are available for examining the results of resection for Pott's disease. One died in twenty-four hours, one in a week, and one in seven months, of general tuberculosis. Horsley reports restoration of power after complete paralysis of six or seven years. Macewen's first case was entirely relieved, having had paraplegia with bed-sores and incontinence for two years. (These two cases show that delay does not necessarily comprise success.) The operation promises a field of usefulness in properly selected cases, but there is danger of many patients being subjected to the operation in whom a slower and less brilliant mode of treatment would produce better results. It is important to decide after what length of time we must give up all hope of the disappearance of paraplegia in Pott's disease. The author records a case in which there was complete paraplegia, but neither incontinence nor bed-sores, for more than three years and a half, and yet the patient finally regained motion and is now able to walk, having had no treatment but proper nourishment and good hygienic surroundings. Changes which follow fracture may result in thickening of the membranes and the production of more or less inflammatory tissue or pus within the spinal canal, sufficient to cause marked pressure on the cord—these resemble cases of Pott's disease suffering from pressure symptoms, plus the amount of the original and unrepaired damage to the cord itself. The question of operative interference in spinal injury must be considered in deference to operation immediately after injury, and operation deferred until the amount and character of permanent disability can be determined. Many of these cases, even if not operated on, not only live, but entirely recover their functions even after the existence of paralysis, incontinence, and bed-sores, for a variable length of time. Out of 82 cases in the Boston City Hospital, 18 survived. Of the 64 fatal cases, 35 died in 5 days, 8 in from 5 to 10 days, and 7 in from 10 to 30 days. Five were operated on, all died. Of the 18 who survived, the result was good in 9, and in 9 complete disability remained permanently. From these figures 21 per cent. of fractures of the spine survive, and over 10 per cent. make a satisfactory recovery.

Within the last year the author has had one dislocation (of the second cervical vertebra) and five fractures of the spine. The case of dislocation died 18 hours after the accident. In three cases of fracture the plaster-jacket was applied soon after the accident with entirely satisfactory results in two, but only partially so in the third. In the fourth case of fracture an air bed was used with persistence of the paralysis and incontinence and the development of bed-sores; this case was operated on five months after the accident with small or no improvement of the symptoms as a result. The last case was treated on an ordinary bed, great care being exercised to avoid pressure, and at the end of several months had gained control over the bladder and rectum, complete restoration of sensation, and improvement of motor power. The disabilities were markedly improved by systematic suspensions later.

The author gives the history of each case separately. He applies his plaster jackets by using hammock suspension as first recommended by Davy, and he considers this quite an important item ; extension can be perfectly well practiced with the hammock with the advantage of an anæsthetic, which can be safely given in the recumbent position. He was not discouraged by the result of his operation ; he thinks it shows the need for an earlier operation. He has found the reports of ten cases of trephining the spine for fracture since Horsley's paper, most of these badly reported. Most of the patients lived, some slight improvement noted, but in none has there been entire disappearance of the paralytic symptoms. In all the cases where decided benefit followed, fracture of the arch only was reported. The operation is not difficult, and Horsley has fully described the technique. His conclusions are :—1. In fractures of the cervical vertebræ, there is indicated immediate reduction of any displacement by extension and manipulation under an anæthetic, followed by continuous extension and immobilization.

2. In all fractures of the dorsal or lumbar spine, involving the bodies or the arches, with or without evidence of injury to the cord, the immediate application of the plaster jacket by hammock suspension preceded, if there is an evident displacement, by extension under an anæsthetic.

3. When symptoms indicating injury to the cord persist without improvement, resection is indicated.

4. Immediate operation would be indicated when there is marked depression of the arches with symptoms of paralysis.

5. Long continuance of the symptoms is not in itself a contra-indication to operation.

6. We have in suspension the means of alleviating some of the sequelæ of fracture of the spine.

ON THE TREATMENT OF UTERINE TUMORS BY ELECTRICITY. By Thomas Keith, M.D., LL.D. From *British Medical Journal*, June 8, 1888.

The author states that he was old enough to have seen the old methods of applying electricity in the so-called 'discussion" of uterine and ovarian tumor, and that the resulting disasters had been so common that it was speedily given up. Since that time, until lately, he has avoided the practice. Although Dr. Kimball and Dr. Cutter cured some patients, he still thought the introduction of the needle through the abdominal wall too dangerous. After a very large experience with these tumors he says he has only met with disappointment. The tendency for a uterine fibroid is to grow, and he doubts if he has ever seen a decided case where it disappeared during the active stage of its existence. Curetting the uterine cavity gave the best results, but they were generally only temporary. He has never had a case of fatal hæmorrhage, though many have come near it. Plugging the vagina, or better the cervix, a hot water injection has always saved them. He cannot account for those sudden floodings which occur with uterine fibroids. He has never seen any permanent good resulting from repeated visits to mineral watering places. The change of life was our great and almost only hope, and that was often delayed; moreover, the preceding three or four years are the most dangerous and trying times for a woman with a bleeding fibroid.

Apostoli's treatment is the only one—not surgical—worth speaking of which does any good, and is free from danger. He thinks he should have held on to hysterectomy if any one did, for his results are better than anyone else's, but he has given up all surgical operations for this treatment, and he is more and more satisfied with it the longer he uses it. Two years ago he had just succeeded in getting a new building for the special purpose of lowering the mortality from hysterectomy (for he found it four times as large in general hospitals as in private), when Apostoli's method was more fully explained by Dr. Webb. After going to Paris to visit Apostoli's clinic, and after testing the method, the work on the special hospital was suspended and soon abandoned. Hysterectomy is the quick plan, but Apostoli's method though slow, requiring much patience, tenderness of manipulation, and thought, is still sure in its results. Sometimes on account of the slow progress, the patient becomes discouraged, two or three months sometimes passing by without change. After a while, though, there is always improvement in general health and in local symptoms. Menstruation becomes easy and painless. This treatment puts a woman with a fibroid tumor, who suffers much, into the position of one who does not suffer. It does not cause the disappearance of the tumor—or rarely does so—but the size is often lessened one-half, one-third, two-thirds. Tension is taken off all round, irritability of the bladder relieved ; in a word, the woman is well, her whole life is changed, and all this without danger to life.

On the other hand, the opponents to this treatment have nothing to offer except in the most favorable cases ; for these they offer hysterectomy. He has often had the best results, by Apostoli's method, in cases which could not be operated on because of too great weakness or too many adhesions. The mortality for hysterectomy is about twenty-five per cent. But by far the larger proportion of women with fibrous tumors need no treatment. They are best left alone unless there are bad symptoms.

He thinks many are prejudiced against electricity, because they consider it quackery and know nothing about it. His confidence in its power to relieve disturbing symptoms of uterine fibroids, and to cure many chronic inflammatory conditions in the pelvis, continues to increase. He has no fears for the future of electricity. He thinks we have much work before us to understand it more thoroughly. He concludes by pleading that all bloody operations for uterine fibroids should cease, and that Apostoli's method be given a fair trial. Hysterectomy kills every fourth or fifth woman, and ten per cent of those who get cured become insane. So he thinks it time to stop such an operation, and this is the plea of the surgeon who has been more successful in this operation than any other surgeon.

M. ROUX, in the Croonian Lecture on Preventive Inoculation, delivered before the Royal Society (London), on behalf of M. Louis Pasteur, claims that since the commencement of the inoculation for hydrophobia (July, 1885), until now (March 21, 1889), 6,870 persons have been treated at the Paris Institute alone ; and among these there were many severely wounded. The proof of the rabidity of the animals that gave the bite has been furnished either by experience or by veterinary examination in eighty per cent of the cases. The mortality among the persons bitten by indubitably mad dogs and thus treated is about 1 per cent ; a very low rate compared with thatof 15 per cent. which usually follows the bite of mad dogs. The mortality among those bitten on the head and face by rabid animals, is well known to be usually about eighty per cent, whereas among those treated in the Pasteur Institute the mortality does not reach four per cent.

MILK FOR INFANTS IN SUMMER.—By John M. Keating, M.D., Philadelphia. (From the *Medical and Surgical Reporter*, July 27, 1889.

The author thinks it is time to turn our attention to the class of humanity whose ignorance, carelessness, and poverty, render them entirely unfit to care for their children, and to endeavor, if possible, to cause a general interest to be taken by the public, that will teach these mothers the value of caring for their children and to place means at their disposal for doing so. He says we have learned an important fact, that cholera infantum and such complaints are not caused by the intense heat alone, but are caused by the character of the food, and are principally due to the putrefaction of milk through the agency of germs that enter it from without, or from the admixture of dirty water. We can't expect the poor in our alleys to be supplied with pure milk, nor could they keep it pure all day without refrigerators, which they have not. The way to get out of this difficulty is to make stringent laws so as to permit of the sale of pure milk only. Second, devise some means by which milk, slightly tainted, can be made harmless, and some means by which milk can be kept a few hours until used. This latter is accomplished absolutely by boiling or steaming. If, then, we would urge the poor with whom we come in contact, to *boil* all the milk they get from their milkman and place it at once in pint bottles, tightly corked, and then open each bottle as needed, we would diminish the death rate from cholera infantum.

APHASIA AND APRAXIA.—In an extremely interesting paper read before the New York Academy of Medicine, Dr. M. Allen Starr enters fully into the varieties of aphasia and apraxia, and gives valuable practical directions for the examination of persons presenting these symptoms.

To examine an aphasic thoroughly it is necessary to test:

1st. The power to recall the spoken or written name of objects seen, heard, handled, tasted or smelt.

2d. The power to understand speech and musical tunes.

3d. The power to understand printed or written words.

4th. The power to speak voluntarily. Does he talk clearly? Does he mispronounce words? Does he talk jargon?

5th. The power to repeat a word after another.

6th. The power to read aloud. Does he understand what he reads?

7th. The power to write voluntarily. Can he read what he has written?

8th. The power to write at dictation.

9th. The power to copy.

10th. The power to recognize the use of objects seen, heard, felt, tasted or smelt.

By apraxia is meant the inability to recognize the use or import of an object, and it includes the conditions first described as blindness of mind and deafness of mind. The variety known as blindness of mind is that most commonly found. The first example of its successful treatment by operation is recorded by MacEwen, of Glasgow, in the *British Medical Journal* for August 11, 1888. A man who had received an injury a year previously to his applying for treatment suffered from deep melancholy and strong homicidal tendencies, which were relieved by paroxysms of pain in the head. There were no motor phenomena, but it was discovered that immediately after the accident, and for two weeks subsequently, he had suffered from psychical blindness.

Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him, which he could not make out; but when this object emitted sounds of the human voice, he at once recognized it to be a man. In attempting to read he saw what he considered must be letters and words, but they were unknown symbols to him; they conveyed no impression of their meaning; the memory of their signs was gone; it was a sealed book to him. These phenomena gave the key to the hidden lesion in the brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer and had exercised pressure on the posterior portion of the supra-marginal convolutions, while a corner of it had penetrated and lay embedded in the anterior portion of the angular gyrus. Removal of the bone resulted in complete recovery from the pain and mental symptoms.

The variety of apraxia known as deafness of mind has recently been studied by Oppenheim (Charite Annalen, XIII., 1888), of Berlin, who noticed that while some aphasics retain their musical faculties, others may lose the power to follow melodies, to appreciate music, or to hear or sing the tunes which they formerly knew.

To test for apraxia it is only necessary to present various objects to a person in various ways and notice whether he gives evidence of recognition. Aphasia occurs without apraxia, but apraxia cannot occur except in connection with some form of aphasia.

TREATMENT OF SCROFULOUS GLANDS.—At a meeting of the Harveian Society of London, held Thursday, April 25th, 1889, Thomas Buzzard, M.D., F.R.C.P., President, in the Chair, Mr. Frederick Treves commented upon the varied use of the terms tuberculosis and scrofula in medical literature. It had been demonstrated at one time or another that scrofula was a tuberculur process, that tubercle was a scrofulous manifestation, that the two conditions were totally separate from one another, and that they were absolutely identical. These bewildering discussions had seriously affected the question of treatment, had raised numerous false issues, and had had a serious influence upon surgical progress. While some surgeons had condemned all operative interference on the ground thet scrofula was a purely constitutional disease, others had been reckless in the use of the knife on the ground that the affection was purely local. Mr. Treves believed that scrofulous affections were essentially tuberculous, and that the tubercular process was to be regarded merely as an inflammatory condition of a peculiar and destructive type. Phthisis, white swelling, scrofulous orchitis, caries of the spine, and strumous adenitis were forms of one pathological condition. Acute miliary tuberculosis could no more be accepted as the type of tubercular disease than acute pyæmia could be regarded as representative of the suppurative process. So far as the glands were concerned, the typical change in struma was caseation. It indicated a stage of the process, and a period in the development of the disease at which the question of operation could be best considered. The cheesy mass was in no way a deposit; it represented the *débris* of a chronic inflammation. It was entirely non-vascular, and could undergo no organic change. It was as much a foreign substance as the sequestrum in necrosis, and would in due course excite suppuration in the tissues around, and be thus got rid of. Under no circumstances could the caseous mass itself break down into pus. The treatment of scrofulous glands had undergone a remarkable change during the last few years. Struma had been, as Malcolm said in "Macbeth," "the mere despair of surgery," but nowadays its effects could be treated with precision. Mr. Treves was averse to any local treatment other than excision. He described his method of operating by two incisions, the scars of which were quite hidden. All other local treatment he believed to be harmful. Dr. Symes Thompson remarked upon the relation of removal of these enlarged glands to lung disease. He had observed cases in a condition where the glands were not important surgically, and also where the lung trouble was so far advanced as to prohibit successful surgical procedure. Dr. Symes Thompson had not observed any increase in the lung disease from removal of these enlarged glands. Notwithstanding the existence of lung disease, the glands might be removed with benefit to the patient. Mr. Treves (Margate) had had an experience of 2,000 cases of this kind at Margate. He had employed most of the older methods with absolutely no good effect. The perchloride of mercury in small doses certainly did tend to diminish the size of the glands and to control the surrounding inflammation. Since he had employed excision of these glands he had had no ill results. He, in after-treatment, insisted strongly upon the employment of pressure. He did not agree with Mr. Treves, of London, as to the sufficiency of the incisions he had described; many cases required much freer cutting if the whole mischief was to be removed. He did not altogether give up the use of the scoop, for it was availiable when the knife could not be employed; partial operations did more harm than good. He operated on every case if the internal organs were sound, but in no other condition. He had seen injections of these glands with iodide of starch, but it was quite useless. He considered that caseation was not essential to the anatomy of a scrofulous gland. Mr. Thornton (Margate) had seen extremely bad results from continued poulticing. The skin was thereby made rotten, and the tissue around the gland very unhealthy. He had had some difficulty in deciding when to operate, and he asked for indications as to the onset of permanent incurable changes. There were cases where it was impossible to remove the glands entirely by the knife. Mr. Thornton had once wounded the jugular, and could not have tied the vessel without a long incision. The division of the sterno-mastoid was a harmless matter and sometimes necessary. Mr. Christopher Heath supported

Mr. Treves in his onslaught on iodine paint. He had never known it to do any good unless it blistered at the same time. He had seen great improvements from the local application of the Kreuznach waters. He also spoke highly of the use of the waters of the Woodhall Spa. In a less degree the local application of iodine was of use. As to internal remedies, he advocated the use of cod-liver oil, and especially of the older form of brown oil. He doubted whether patients with a slight enlargement of the glands would suffer removal. Such glands might and did disappear spontaneously. Mr. Heath preferred enucleation to complete removal; he had seen, however, that other glands appeared after removal of all those which were visibly enlarged. He had never believed in the use of the actual cautery. Mr. Hill reminded Mr. Treves that the tonsil and the glands were similar in structure, and probably enlargement of the tonsils was also secondary. He believed that in many cases the tonsils were enlarged by the irritation of abnormal secretions of the mouth and nose. Enlargement of the tonsils could not cause a caseating gland but hypertrophy only. Mr. Watson Cheyne thought that other than caseating glands were scrofulous. A gland might be strumous before it was noticeable. He inquired whether Mr. Treves would excise such small glands. He was averse to such very drastic operative interference. He doubted whether the disease could always be adequately removed by operation. He recommended in some cases rest, constitutional treatment and occcasionally even injection of pure carbolic acid. Mr. Cheyne did not think scraping as good as excision, but it was nevertheless occasionally useful. The President mentioned a case in his own practice of a girl with chronic tonic torticollis, which resisted treatment based upon a neuro-muscular theory of the disease. In the end a deep strumous gland suppurated, and on its healing a cure of the torticollis resulted. He suggested that in such cases it might be desirable to cut down and seek for an irritating strumous gland. He inquired whether it was not true that scrofulous glands were not so common as they used to be. He thought not. He had seen scrofulous glands actually cultivated in a school by hygienic malmanagement. He had thought that the main causes were the absence of a sufficient quantity of milk in the dietary, and insufficient ventilation. Dr. Buzzard believed that the present infrequency of scrofulous glands was greatly due to the improvement of the milk supply to the metropolis. He thought much could be done by preventive treatment, by the liberal use of milk, and by adequate exposure to fresh air. Mr. Treves replied.—*British Medical Journal.*

MASSAGE IN THE TREATMENT OF EYE DISEASES.

In an address upon this subject, made at the recent Cologne meeting of the German Naturalists and Physicians, Dr. Pfalz, of Düeseldorf, calls renewed attention to the matter, and chides the silence of others. While Pagenstecher's recommendation of this means of treating various affections of the anterior segment of the eyeball, and especially of clearing up corneal opacities, has doubtless been widely adopted; and the ointment of the yellow oxide of mercury, commonly used as an adjuvant, is often called by his name; it is as yet a fact that not much has been written upon the subject. Many text-books make little or no mention of massage, and the matter probably lacks deserved attention.

For the clearing away of opacities in the cornea, numerous medicaments, in the form of solutions, powders, or ointments, had long been employed, and among them the amorphous precipitates of mercury; but it seems to have been by Pagenstecher first that the *rubbing* was emphasized as an important element in the use of stimulating ointments; and others have proven its efficacy by omitting not only the medicament, but also the lubricant which he directed. Pagenstecher first commended its use for episcleritis and pannus; later for most slow and chronic affections of the anterior segment of the eye, except when iritis was present—involvement of the iris constituting a distinct counter-indication to its employment. This view is so far modified by Pfalz as to include chronic *plastic* iritis and its results among the conditions in which massage may be employed, after the more acute stage is passed, with safety, and sometimes with marked benefit. Serous iritis seems always intolerant of such treatment, and little benefited by it, when borne. The value of the measure in lid-affections has been less noted; and while claiming for it but a limited change of application, Pfalz urges its usefulness in blepharitis, follicular conjunctivits, and other chronic inflammations of the lids and conjunctiva, basing his views upon the anatomical disposition of the blood and lymph vessels, as well as upon clinical observation.

Theoretically, massage empties the vessels, and their refilling takes place not only from the capillaries, but also by imbibition from the tissues; while increased tone of their walls lessens the tendency to subsequent dilatation. Exudations are diffused over a wider area, and their absorption thus facilitated; while the circulation is quickened, and perhaps the trophic nerves stimulated, by the gentle irritation. Of course, that only certain tissues are open to such direct action of the massage, as Pfalz claims, is probably like several of the points discussed, not beyond question; such, at least, is the explanation which he urges for the widening of the pupil which he observes as a result of the manœuvre.

Several cases are upon record where a sudden obscuring of the vision has disappeared after rubbing the eyes; and the nature of the case, and the subsequent history made it very probable that stasis in the retinal vessels, due to embolism or thrombosis, had been present, and yielded to the massage. An unmistakable case of thrombosis of a retinal artery so relieved, has just been reported by Hirschberg.

Massage has also been utilized, after Forster's method, to triturate the lens-substance of slow-ripening cataracts, in order to hasten the maturation, and also to promote the absorption of a soft cataract after discission. Probably under the same title can be included the measure advocated by Michel—passive motion of a paralyzed or paretic muscle by grasping the tendon with fixation forceps and exercising the defective muscle by gentle stretching, alternated with stretching of its antagonist. Each of these procedures has met with more or less success when conscientiously carried out in suitable cases; and the negative or unfavorable results sometimes reported may often be ascribed to the operator rather than to the measures themselves.

The great drawback to the wider utilization in many cases, is the time that it takes. While a couple of minutes is all that is usually wise to expend upon any one region, this is too often more than the surgeon is willing to give. He therefore regulates the matter to some attendant, with the result that the method, if properly applied at all, is not judiciously directed, as it must needs be in order to obtain the best results. These are potent, and by no means harmless procedures, and their abuse may more than undo any good effects.

In its ordinary application to affections of the anterior segment of the globe, the lids should be gently closed and drawn a little tense by the fingers of the operator, and then *lightly* stroked by quick presses of the thumb, the index finger, or a cotton pledget. For the cornea, radiate stroking of one sector at a time is the best, carried, of course, from centre to periphery; circumcorneal lesions may be rubbed by a circular motion. In the case of the lids, the movement should be from internal to external canthus along the upper or the lower margin of the tarsus, and may be continued out and down upon the cheek, along the course of the vessels. So employed at intervals of from one to three days, massage acts as a decided stimulant, reddening the eye for a short time, but generally soon reducing any congestion present. Any desired medicament may be rubbed in by the manipulation, the yellow oxide ointment being a favorite. (A salve so used must be free from all gritty particles, a condition easily obtained in that of the yellow precipitate by adding an equal proportion of oleic acid, and rubbing it up with vaseline; the resulting orange-colored ointment in a few days becomes pale yellow and transparent, from solution of the mercurial salt). Where the palpebral conjunctiva is the affected tissue, the everted surface of the lid may be rubbed.

As an explanation of some of the effects of massage upon corneal opacities, Pfalz points to the findings of the corneal microscope, which demonstrate in many cases tracts of vascuralization, generally superficial, which are very prone to congestion upon slight cause. These he has rarely been able wholly to get rid of; but improved tone had lessened their irritability and their size has been reduced so that they and the surrounding infiltration have ceased to be so great an obstacle to distinct vision. Old cicatrices may grow little if at all thinner; yet the smoothing of their superficial roughness may lead to a marked improvement in the visual sharpness. One case which Pfalz cites seems an extreme one, where in an interstitial keratitis with involvement of the iris, which had proved very rebellious, the vision was raised in four days from counting fingers at three feet to $\frac{4}{24}$, and in twelve sittings to $\frac{2}{3}$.

The applications of massage are thus claimed to be more extensive than generally thought; and the paper of Dr. Pfalz, while decidedly enthusiastic, seems to merit careful consideration. American ophthalmic surgeons have long made some use of massage, but certainly few can claim to have given it such a test as here described, and while the results have not generally been so brilliant, and have often been ascribed to the medicament employed, rather than to the manipulation, it seems well to invite renewed attention to the subject, in the hope that more extended and careful tests will confirm the claims that are urged by its advocates.—*Med. News.*

CLINICAL RECORDS.

On the Treatment of Ulcer of the Stomach by Means of Liq. Ferri Albuminati. By Dr. Te Gempt, of Uelsen, near Lingen.*

For a long time it has been known that the affection designated as round or eroding ulcer of the stomach, occurs very frequently in chlorotic girls and women, and that other forms of anæmia—particularly that following prolonged lactation—dispose to gastric ulcer.

Various theories have been advanced to explain this etiological connection. At first the origin of the affection was believed to be the constriction and thinness of the walls of the arterial coats (which conditions were proved to exist by Virchow and Rokitonsky); then again the causation was referred to the abnormal secretion of gastric juice found in such cases of anæmia.

However diverse these theories may be, all practitioners agree that an etiological relation really exists between chlorosis and anæmia on the one hand and gastric ulcer on the other, and that a permanent cure of the latter often only results from an improvement in the former. That the employment of preparations of iron, suggested by the causation of ulcer of the stomach, has been so little recommended in these cases—in fact, warned against—may be referred to the fact that our preparations of iron—even ferruginous waters—are not tolerated by such patients, because iron is so apt to produce digestive disturbances.

Dr. Peters—an experienced physician of Elster—says in a popular medical journal, that "the use of iron in gastric ulcer is to be cautioned against, because it almost invariably proves intolerable. At first the stomach takes it apparently well, but after a prolonged use quite distressing disturbances develop, such as pain and discomfort in the region of the stomach." Neuss also believes the employment of

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*Translated for *Notes on New Remedies*, by Wm. Fankhauser, M.D.

chalybeates in this affection to be contra-indicated on account of the digestive arrangements apt to follow.

Similar is the experience of almost every physician, and I have not learned from any source that the extensive use of iron in ulcer of the stomach *has* been recommended. On the other hand, preparations of iron are usually administered *after the ulcer has healed*—during the oft prolonged stage of convalescence—with the purpose of improving the supervening anæmia, and thereby guarding against a return of the gastric ulcer. My own experience in the administration of iron in cases of gastric ulcer is confined to liquor ferri albuminati, made by Dr. Drees of Bentheim, in Hannover. As early as 1878, the same Dr. Drees gave a sketch of the procedure to produce a soluble albuminate of iron in an article on this topic. Later, after he had succeeded in producing the preparation in larger quantities and of more uniform composition, it was employed therapeutically in various Clinics in cases of anæmia and impoverished conditions of the blood; and after being recommended by Gerhardt, Eulenburg, Uffelmann (of Rostock) and Küssner (of Halle), it became universally known and is now kept on hand by most druggists.

It represents a salt in which all the acid is replaced by albumen. It is of a neutral reaction, free from metalic and astringent taste, keeps well, and is absorbed with unusual facility.

Having stated, after a wide experience of five years, that in all cases of chlorosis and impoverishment of the blood, liquor ferri albuminati proved to be the most digestible preparation of iron, and that it never failed to do good—and having obtained such excellent results from its use in patients *convalescing* from an ulcer ventriculi, in rapidly improving the symptoms of anæmia remaining and resulting in no disturbance of digestion in any instance, I ventured to employ liquor ferri albuminati in cases where the presence of gastric ulcer had not as yet been established with certainty. At first, of course, I refrained from administering the medicine until there had been no vomiting—and particularly no hæmorrhage—for several consecutive days. My success with the treatment, however, was so surprising that I no longer hesitated to give the albuminate of iron solution even a *short* time after a hæmorrhage.

The quantity I use is a half to one teaspoonful three times daily; to children 5–30 drops per dose, according to the age. As the preparation contains ½ per cent. of oxide of iron (Fe_2O_3) a fair amount of this metal is certain to find its way into the blood, owing to the facility with which the solution is absorbed. I gave it shortly before meals, not only to facilitate assimilation, but because the patients almost always said it stimulated their appetite. When I thought it necessary to dilute the medicine I would advise that it be given in half a cup full of milk. This mode of administration proved very agreeable and was preferred by many patients.

Although liquor ferri albuminati is well adapted for subcutaneous injection, as was confirmed by Gerhardt, I made no use of this mode of medication, for the reason that the preparation never produced any digestive disturbances when given per os.

Liquor ferri albuminati contains iron in the form of an albuminated oxide which is absolutely free from acid, and consequently causes no coagulation or precipitation when mixed with milk, chyle, or other liquids containing albumen. It furthermore does not irritate the stomach, nor does it injure the teeth or effect the mucous membranes of the mouth. Never did the ingestion of this preparation *produce* gastric pains, or increase the same when present. Even after employing the remedy for some length of time, no such disturbances were manifested, and I have often used it *uninterruptedly* for several months. Strange to say, the hæmorrhages never recurred after instituting the treatment with liquor ferri albuminati. Whether this fact may be partly ascribed to the general instructions imparted in each case, or to chance, we can prescribe liquor ferri albuminati in these cases without fear of causing an irritation of the gastric mucous membrane, or of the surface of the ulcer, and without fear of provoking a hæmorrhage. I hardly deem it necessary to state that the etiology of ulcer of the stomach indicates the employment of additional measures. It is not my intention to prove that in liquor ferri albuminati we have gained possession of a preparation which is preferable (owing to its chemical and physical characteristics) to all other ferruginous preparations in all cases where the use of the latter is indicated, and that particularly in the treatment of gastric ulcer we have gained one more curative agent—but rather to inform my colleagues of my experience in the administration of liquor ferri albuminati in such conditions, and to request them to make further observations with this preparation. I will not enumerate the manifold instances in which I prescribed the remedy with good results, but will relate the clinical histories of several carefully observed cases, to show my method of treatment, and to prove that a recent hæmorrhage from the stomach is no contra-indication to the therapeutical employment of liquor ferri albuminati.

Permit me, therefore; to cite the following cases minutely:

Case I.—Mrs. J., in W., æt. 33 years, formerly a healthy woman; gave birth in May, 1884, to her fourth child. She nursed the child all along. It improved steadily, but anæmia, headaches, dizziness, dyspnœa, and lassitude supervened in the mother in March, 1885. Menstruation failed to return after confinement. In the beginning of April pain in the stomach, eructations and vomiting. On the 21st of April, profuse hæmatemesis and intense pains. Repetition of the same on the following day. *Condition on presentation, April 22d:* Waxy appearance, thready pulse, tenderness in the region of the stomach, nausea, constipation since several days, loud venous hums in the neck, lungs sound, heart sounds weak and occasionally intermittent, 84 per minute. *Diagnosis:* Ulcers ventriculi. *Treatment:* A hypodermic injection of one-eighth grain of muriate of morphine in the epigastrium. Ice water poultices, ice cold milk in small quantities as nourishment, the point of a knife full of artificial Carlsbad salt every morning, and a teaspoonful of liquor ferri albuminati in cold milk three times daily. No vomiting until the 29th of April; bowels moved daily, passages of a tarry character during the first few days. On the 29th, violent eructations and nausea, but no vomiting. Patient somewhat better. Milk diet cautiously introduced, Carlsbad salt ordered in very small doses, and liquor ferri albuminati continued. A few drops of solution of muriate of morphine (0.10) in bitter almond water (10.0) were administered on several occasions to relieve the gastric pain which occurred in the evening. *May 4th*, progressive improvement. Patient is able to leave the bed, slight tenderness to pressure in the epigastrium, no eructations and no vomiting. Finely scraped meat in moderate quantities and a little wine are allowed with the milk diet. Later, occasional slight pains from irregularities in the diet. On the 28th of June, the patient had completely recovered. Menstruation re-established, she carried the child herself to be vaccinated, no spontaneous pains any more; still slight tenderness to pressure in the region of the stomach. She is advised to take liquor ferri albuminati for several weeks more. On the 6th of July all treatment discontinued —500 grammes of liquor ferri albuminati had been used. The woman gradually adopted her usual diet, and was well for months following.

Case II.—Mrs. V., in H., æt. 45 years, married. The patient, who had long suffered from pains in the stomach, digestive disturbances, anæmia and dysmennorrhoea, but had had no medical treatment, had a slight haemorrhage on the 20th of May, 1885, and one of 1½ litres on the 21st of May.—*Condition on presentation:* Wretched appearance, extremely pale skin, terrible pains in the stomach, great sensitiveness to pressure in the region of the stomach; also eructations. During the examination another cup full of blood vomited. Constipation, tarry stools for three days previous, tarry masses passed before then. No other organic trouble. Heart sounds weak but distinct, a single murmur with the systole of the heart. *Treatment:* First an injection of ergotin, and after a time an injection of ⅙ gr. mur. morphine in the region of the stomach, cold applications, cooled milk diluted with water as a nourishment. A teaspoonful of Carlsbad salt every morning, and a teaspoonful of liq. ferri alb. three times daily. After administering a few powders containing ⅙ gr. mur. morphine to relieve the violent pain evenings, the latter subsided. On the 26th of May the patient had somewhat recovered, and asked for more nourishment. Cold milk, soup and the yolks of two eggs allowed daily. *June 15th*, the patient considers herself cured, but there is a slight tenderness in the region of the stomach, for which treatment is continued. *August 1st*, patient appeared with some surgical malady, but the stomach affection had been completely healed, and she had improved so much in appearance that I failed to recognize her. Of the liquor ferri albuminati, which had been discontinued for several weeks, she had used in all 600 grammes.

Case III.—Mrs. W., in H., wife of a farmer, 39 years of age, suffered frequently from cramps in the stomach, constipation and eructations while a girl. Lately, has had attacks of dizziness and headaches, and other symptoms of anæmia. On the 26th of June, 1885, she had pains in the region of the stomach, with vomiting of blood amounting to four cups full. Great anxiety, pale appearance, palpitation of the heart, marked tendency to pressure in the epigastrium, and spontaneous pains. *Diagnosis:* Ulcers ventriculi. *Treatment:* Injection of ⅙ grain mur. morphine, cold milk, and Koch's meat peptone, in the form of a cold infusion, as nourishment. At the same time, Carlsbad salt in the morning, and a teaspoonful of liq. ferri albuminati three times daily. As the nausea diminished in a few days, and the stools no longer had a tarry color, milk dishes were permitted to be cautiously taken; also buttermilk. On the 10th of August, the patient presented herself, *cured.* Of the liq. ferri alb. 450 grammes had been taken in all. Patient declares she never felt so well before, and there are no more symptoms of disease; the skin and mucous membranes look healthy.

Case IV.—Miss A., 20 years of age, presented herself on the 20th of June. She had been frequently treated for anæmia, and has had anæmic symptoms for the last few months, pains in the stomach, loss of appetite, and tenderness in the region of the stomach since the last four weeks; vomiting several times daily, shortly after eating, and frequent haemorrhages, usually of about two cups full, during the last few days. Constipation, the excrements having the characteristic tar color. *Condition on presentation, June 20th:* Fair nutrition with extreme paleness of the mucous membranes; loud venous hums, violent palpitation of the heart, nothing abnormal about the lungs. Extreme tenderness in the region of the stomach. *Diagnosis:* Chlorosis with Ulcers ventriculi. *Treatment:* Koch's beef peptone and cold milk as food, Carlsbad salt in small doses every morning, and liq. ferri alb. in teaspoonful doses three times daily. As there had been no more vomiting up to June 27th, milk, soup, and the yolk of one egg were allowed daily. Eructations occasionally, but no vomiting. July 2d, considerable improvement in the pallor of the face, but still chlorotic disturbances; gastric symptoms much milder. Until July 21st, there had been used 300 grammes of liq. ferri alb. Now the general condition of the patient is much better. The usual diet is gradually and carefully returned to, but the iron is continued. August 10th, patient discharged, *cured.* When seen a month later, patient was still improving in health.

The clinical histories just related contain all the points I should like to bring out. They furnish the proof that we are enabled to successfully combat the disturbances of nutrition, which so often form the foundation of the development of gastric ulcer, by means of employing a preparation of iron which is easily absorbed and not irritating to the mucous membranes of the alimentary canal. The fact that "liq. ferri albuminati, drees" was considered an appetizer by most of the patients, and the fact that the same never caused an increase of pain, are the best proofs of its superior digestibility.

Naturally, of course, I always continued the preparation until recovery was complete. Narcotics,—particularly morphine,—were only administered after the occurrence of a violent haemorrhage, for the purpose of relieving the mental anxiety and, at the same time, to diminish peristalsis, and for the purpose of overcoming the attacks of cardialgia. As long as the pains in the stomach were not very severe, I refrained from the use of narcotics for the reason that they generally impair the appetite. On the contrary, Carlsbad salt could not be dispensed with; it was usually given along with the liq. ferri albuminati during the whole period of treatment. Ordinarily, one half to one teaspoonful (dissolved in a large quantity of water and taken on an empty stomach in the morning) sufficed to overcome the constipation and to check the excessive acid formation.

In regard to nourishing the patients, I in most cases adhered to the method of Ziemssen. During the first few days after a haemorrhage, ice cold milk in small quantities was allowed; later on, the so-called milk diet was adopted. In the cases in which even this was not tolerated, Koch's beef peptone often rendered valuable services. Only on few occasions was I compelled to give the peptone in an enema; most frequently it was acceptable in the form of a cold bouillon. At all events, it surpasses in digestibility the Leube's solution, which used to be administered in this affection, and is more readily taken by the patients.

In conclusion, permit me to say that,—inspired by this favorable experience,—I have employed liq. ferri alb., drees, therapeutically in other abnormal conditions of the blood:—in scrofula, in leucocythæmia and pernicious anæmia; but my observations were not extensive enough to enable me to judge positively of the success of the treatment. But in every case, liq. ferri alb. proved to be easy of absorption, and a highly acceptable preparation of iron. I wish also to allude to the fact that in pulmonary phthisis, in the incipient stage, and in "affections of the apices of the lungs," liq. ferri alb. has rendered me valuable services, and that moderate febrile movement is no contra-indication to the employment of this ferruginous solution in such diseases. In a series of such cases, I have seen the symptoms of catarrh diminish, and even disappear. Here also, however, my observations have not been concluded, but I intend to complete them and report later.

RUPTURE OF THE POPLITEAL ARTERY; SUCCESSFUL TRANSFUSION.

By A. R. Anderson, F.R.C.S.

L. H., æt. 15 years, was admitted into the Nottingham General Hospital on June 30th, 1888, suffering from a swelling above and around the knee. He stated that a month previously he had his right knee crushed between two colliery trams. Directly afterwards the parts about the knee became painful and much swollen, and he was unable to walk or to move the limb. He was attended at home for four weeks, and then came to the hospital. On admission, the lower third of the thigh was much swollen, the skin tense and slightly œdematous, and on the inner side was a circumscribed red patch where the integument was distinctly thinner, as though an abscess were pointing there. The part was distinctly hot. There was slight œdema of the leg and foot. There was an evident fluctuation over the inflamed spot in the thigh. Pain was great and movement of the knee impossible, although it was evident that the joint itself was not implicated. He lay with the limb flexed and on its outer side. For two days the boy was treated with hot fomentations, and then an incision was made on the inner side over the red patch, and some turbid serum and blood-clot escaped, but no actual pus. A counter-opening was made on the other side and a drainage tube inserted; this was on July 2nd. The wounds were dressed antiseptically daily, and some further broken-up blood-clot came away, but nothing of note occurred. On July 10th, without any warning, a very violent hæmorrhage took place. The bed was soaked with arterial blood; the boy blanched and gasping for breath. Jactitation was well marked. There was a death-like pallor; skin cold and sweating. He was almost pulseless—indeed, it was only in the larger vessels that it could be felt; it could not be made out in the radials. The femoral was instantly compressed, and a Petit's tourniquet applied; ether was injected under the skin, and brandy given, but with scarcely any effect. The boy appeared to be sinking, and was to all appearance moribund. The opposite femoral and both brachials were temporarily compressed in order the better to supply the heart and brain with what blood remained in his body. He showed no signs of rallying, however, under this treatment—the heart's action being tumultuous, irregular and intermittent; and it became apparent to all that unless something was done promptly he would soon be beyond the reach of surgical aid. Transfusion was the only method of treatment which held out any prospect of success, and, as there was no proper apparatus at hand for the purpose, I operated in this way: A small cannula from a pocket trocar was attached to an indiarubber tube, and to the other end of the tube a glass funnel. The solution used was two grains of chloride of sodium to the ounce of warm water (temperature 100°), and eighteen ounces of this was allowed to flow into the median basilic vein, with marvellous and immediate effect. The action of the heart became stronger, quieter and more regular, the jactitation ceased, and the pulse, which had previously been imperceptible at the wrist, became restored. Within two hours he sat up in bed and asked for his tea. The tourniquet was kept loosely applied over the femoral, and the part carefully watched during the night for further bleeding. None occurred, and the next morning he had rallied so far as to make a deliberate operation practicable. Mr. Wright, senior surgeon to the hospital, enlarged the wound on the inner side of the thigh, exposing a cavity reaching behind the femur, and containing *débris* of blood-clot, etc., and at the bottom lay the popliteal artery, which was found partially ruptured, and from this the hæmorrhage had evidently proceeded. A ligature was placed on both sides of the wounded spot,, the cavity well cleansed out, a drainage-tube inserted, and the wound closed. There was but little blood lost at the operation; the patient, however, again passed into an alarming state of pallor and pulselessness at the wrist, preceded by irregular, tumultuous cardiac beating, and restlessness. Seeing that death was again impending, with the consent of those present I introduced twelve ounces of the same solution into the median basilic vein of the other arm, with marked benefit as before. On July 13th, two days later, the wound was dressed and he had rallied fairly well. From this time improvement took place daily. At the end of a week he was put on a course of iron. No further hæmorrhage occurred, the wound healed without interruption, and he was discharged cured on September 1st.

Although rupture of the popliteal artery from violence without external wound is an uncommon accident, still this vessel is more commonly so injured than, I believe, any other in the body, the axillary ranking next in this respect. There are various anatomical conditions which doubtless account for this, and which need not be entered into here; but I would remark that, with the knee fully extended, the vessel is in a state of tension, and is perhaps specially tense at those points where its branches are given off. In speaking of the rupture of arteries generally from violence, writers have from time to time noticed the fact that the lesion occurs, as a rule, close to the giving off of some branch. In this case the rupture occurred just at the origin of the superior internal articular artery, which had itself given way at a spot about an inch from its origin, and was found lying torn at the bottom of the wound. The symptoms of this accident are of course, well known. In *complete* rupture the nature of the case would be clearly indicated by the sudden and great swelling of the popliteal space, the absence (as a rule) of pulsation in this swelling, the coldness of the limb, and complete cessation of pulsation in the vessels below. In *partial* rupture, more commonly than not the swelling in the ham pulsates; some pulsation can also be felt in the tibials, and there is but little lowering of temperature in the limb.

Now, in considering the symptoms observed in this case, the interesting question arises, Could rupture of the popliteal artery, whether partial or complete, have been diagnosed at the time of the patient's admission into hospital? He arrived there a month after the injury, and one was confronted by the following signs: 1. Swelling of the whole limb round the lower third of the femur, most marked on the front and inner side of the thigh. 2. Redness and thinning of the skin in that situation, with a distinct sense of fluctuation. 3. Abscence of pulsation in the swelling. 4. Practically no interference with the circulation in the leg and foot, which were warm and natural in appearance, with the exception of a slight œdema, which might have been easily accounted for by the inflammatory centre in the thigh. 5. There was pyrexia. Considering the age of the youth, the situation and character of the swelling, and the history of the case, the opinion was formed that it was one of a limited acute periostitis with localized abscess, such as is known sometimes to occur. This turned out to be incorrect; but considering the vague and misleading signs that presented themselves on examination, it is doubtful whether a correct diagnosis could have been made at this stage. When the incision was made into the swelling, shortly after the patient's admission, and it was found to contain nothing but turbid serum and some dark blood-clot, suspicions were naturally aroused, but nothing definite could be arrived at beyond the fact that there had been an extravasation of blood into the limb, lying chiefly behind the femur, and that what little blood flowed was dark and venous in character. And it may here be remarked, in passing, that, in cases presenting clear signs of lesion of a blood vessel in the popliteal space following injury, it is almost certain to be the artery which has given way, and not the vein. Whilst injury to the artery without implication of the vein is the rule, especially in incomplete rupture, no record of any case in which the vein alone suffered can be found in the English medical journals for the last thirty years—an immunity which may perhaps be explained by reference to its anatomy.

With respect to the treatment of this accident, the most satisfactory method appears to be that of cutting down on and tying the ends of the ruptured vessel, in both the incomplete form and also when complete, if the case be seen before gangrene has become inevitable. It is true that distinguished surgeons have occasionally, but I think very rarely, failed to find the ends of the vessel amid the mass of blood and *débris*.* But in favor of this operation it may be said: 1. That it places the patient in the safest condition possible as far as the risk of any recurrence of the hæmorrhage is concerned. 2. That by early clearing out of the masses of clot, etc., from the popliteal space a potent factor in the production of gangrene is removed—namely the pressure on the collateral circulation. 3. That if gangrene should unfortunately ensue, amputation can easily be performed, with a scarcely diminished prospect of success. In partial rupture ligature of the femoral has been advocated. But the objection to the operation appears to lie in this, that if with an enfeebled circulation in the limb, such as must be present with a partially ruptured popliteal artery, the femoral is ligatured, the risk of gangrene would surely be as great or greater than if the vessel were cut down on and tied. And, as a matter of fact, out of eight recorded cases in which this operation was performed for partial rupture, gangrene of the limb ensued in six. And, again, if after ligature of the femoral the collateral circulation became sufficiently established to ensure the vitality of the limb, there would be every probability of further leakage from the injured vessel.

In conclusion, I would draw attention to the simple method by which the intra-venous saline solution was injected, and to the very gratifying result obtained therefrom; and also to the fact that on leaving the hospital the boy seemed none the worse for the substitution of a pint and a half of salt and water for the arterial blood lost.

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* Nottingham.

PROCEEDINGS OF SOCIETIES.

NEW YORK ACADEMY OF MEDICINE.

Meeting of March 7th, 1889.

The President, Dr. ALFRED L. LOOMIS, in the Chair.

THE TREATMENT OF ACUTE AND SUBACUTE NEPHRITIS.

Dr. Francis Delafield, in a paper with this title, gave a *résumé* of the methods of treatment in these conditions advised by a French, a German, and an American authority, respectively; he also endeavored to determine how the various known drugs and plans of treatment were to be used so as to suit particular cases somewhat more accurately than had hitherto been done in the profession; he had no new drug or therapeutical measure to offer. The object to be kept in view was not to remove any of the symptoms (considered in themselves), but to cure the disease as comfortably and as speedily as possible, or else to prolong to the utmost the patient's power to work or enjoy.

The French writer quoted made the favoring of diuresis the most important indication, and thought this was best accomplished by a strictly milk diet. Dropsy and moderate vomiting could be left to themselves. Uræmic attacks were to be met by active measures, such as chloroform inhalation, and, in case of coma, oxygen inhalation. The German writer (Strümpell) added to this the use of diaphoretics and cathartics, and treated dropsy by sweating and puncturing. The American author (Flint) also advised attempting to remove the excess of urea by diuretics as well as by the skin and intestines, and the dropsy by the same means; he sought to diminish the amount of renal inflammation by dry cups and hot fomentations over the kidneys.

Most other authors agreed in making it the main object to prevent the accumulation of excrementitious substances in the blood; some believed the kidneys could be rested by having their work performed vicariously by increasing the activity of the skin and intestines; and some believed that the ingestion of fluids in amount could wash out the products of renal inflammation. Morphine and digitalis were advised by some in larger or smaller doses, in this or that stage of the disease, and by others their use was as strongly deprecated. Bloodletting was generally restricted in its employment to the nephritis of pregnancy, or to acute attacks in which cerebral symptoms and fever were marked. Thus, generally speaking, the symptoms of the nephritis received a major share of attention, and the nephritis itself did not. He would direct attention from an opposite point of view to the kidneys themselves, and consider the general condition which resulted under the separate heads of acute and subacute nephritis, as differences of the widest sort existed between the two.

The speaker then reviewed the pathology of acute nephritis, its symptoms and its course. In very mild cases no treatment was required beyond confinement in bed and a fluid diet. In severer cases the fever, prostration, loss of appetite, and vomiting, all required no active medicinal interference, and the anæmia, though it was well to prevent its development so far as possible, was not to be attacked by drugs until convalescence became established. The nephritis itself and the cerebral symptoms (caused by contraction of the arteries and increased arterial tension) alone needed active treatment.

It was to be remembered that in nephritis, though the quantity of urine voided was small, its quality was good ; that its secretion by the inflamed kidneys tended to relieve their congestion, so that they were better off than if at rest ; and that a considerable diminution in the amount of urine could be well borne for a week or two. Convulsions and coma belonged, it was true, to the early stages of nephritis with scanty urine, but prolonged anuria produced rather a typhoid state. It was, then, not well to pay much attention to the diminution of urine ; it was better to relieve the congestion of the kidneys so far as possible, and enable them to do their own work, which latter would of itself still further reduce the amount of congestion in them. The nephritis would continue, but the excretion of urea might meanwhile be ample.

The congestion of the kidneys could be relieved for short periods by applying heat to the entire surface of the body, by cuppings and hot applications over the kidneys, by the frequent use of small doses of calomel or sulphate of magnesium until the bowels began to move, and by drugs which lowered the arterial tension. The latter (chloral, opium, and aconite) in small doses were also to be used in case of the occurrence of cerebral symptoms.

The speaker's routine treatment consisted of confinement to bed and a fluid diet, daily washing of the entire skin, and the giving of drachm doses of sulphate of magnesium every hour for two days, or till an ounce was taken, or till the bowels were moved. He expected to see the albumin in the urine lessened within a few days, the pulse soft, the dropsy gone, but a condition of anæmia quite noticeable. Solid food was then gradually introduced in place of milk, and iron and oxygen were given.

In subacute nephritis the thing at fault in the performance of the renal function was not the quantity of urine (for this was often excessive) but its quality. That is, as the disease went on the proportion of solids became constantly less, and the symptoms were largely due to the effects of the nephritis on the composition of the blood and on the bodily nutrition. Anæmia, dropsy, and loss of strength were the prominent symptoms. Cerebral symptoms were more of the chronic sort. Recovery was not to be expected here, though intermissions and a very slow course were frequently met with. The conditions demanding treatment were: 1. The nephritis itself. 2. The nutritive changes. 3. The dropsy. 4. The arterial state. 5. The cerebral symptoms. 6. Acute attacks or exacerbations.

For the nephritis an outdoor life in a warm climate was the best treatment. In a cold climate these patients must stay indoors most of the time. The diet should ordinarily consist of solid foods and of fats. Excess in the use of mineral waters and of milk was to be avoided. Opium and the bichloride of mercury might be of some benefit. For the anæmia his remedies were the inhalation of oxygen, iron internally, massage, and the relief of constipation. Where the regulation of the diet and of the fluids drank, and the treatment of the anæmia, did not relieve a dropsy, and the latter was a cause of real distress, such measures as purging, sweating, and puncturing might be employed; but this would be necessary only in unfavorable cases. The point to keep in mind was that it was not well, when a patient was secreting about seven grains of urea to the ounce, to increase the amount of urine passed beyond what would enable the patient to secrete his normal five hundred grains of urea per diem. The amount of fluids taken should not exceed the amount of urine passed.

It was not well, in his experience, to increase a low arterial tension by digitalis or ergot. Increased arterial tension should be relieved at once, as the condition of the arteries and the excretion of urea seemed to determine the severity of the cerebral symptoms.

Dr. T. E. Satterthwaite thought that there were several distinct states complicated with a nephritis which might give the same symptoms. In but a few cases was the nephritis a primary lesion; it was ordinarily due to any one of several dyscrasias. Examination and classification must therefore precede determination of what the appropriate treatment was in any case. Much experience and a certain amount of trial in individual cases were needed. He believed vomiting was in some cases salutary. He had seen pilocarpine save some lives, but put others in danger. If it was used, the symptoms of poisoning should be looked for and met promptly in case they appeared. A number of other remedies might be called for in special cases depending upon other conditions present.

Dr. A. Jacobi thought that Dr. Delafield had said everything in his paper that was of salient importance, and had made a better because a simpler subdivision of the forms of acute and subacute nephritis than the seven or nine forms which Dr. Satterthwaite recognized as needing to be clinically distinguished. He differed with Dr. Delafield in a few points in regard to treatment; thus, as to what he had said about using caffeine as a heart tonic in uræmic conditions. The speaker had found that whenever there was a condition of cerebral hyperæmia, caffeine was certain to do harm, no matter whether this congestion was active or passive, and on this account he had abandoned its use.

It must certainly be contra-indicated in all cases in which lessening of the blood supply to the head was of benefit. Only recently he had produced complete relief in a case of uræmic coma by applying leeches to the septum of the nose, and caffeine here could only have made the condition worse.

In subacute and chronic nephritit the influence of the bichloride of mercury was, beyond a doubt, excellent. He had employed it in all kinds of chronic interstitial inflammations in the various organs, in small doses, for long periods of time. He had seen patients disabled by cirrhosis of the liver recover a fair degree of health by the use of this remedy alone. In tabes, in cases at least of patients who held their ground, much gain could often be realized from this drug similarly employed.

Many cases of nephritis were not noticed while they were still amenable to treatment—cases that occurred not only after scarlet fever, but after measles and typhoid—and such could be cured by expectant treatment alone if taken in hand early.

In those forms of nephritis which came in the second half of life and were associated with vascular degenerations the addition of bromides to the general treatment was often of benefit; they seemed in old men to regulate a circulation disordered by atheromatous degenerations in the arteries. The use of digitalis was to be avoided in acute nephritis, as patients did better without it. If a heart tonic was required, sparteine would have all the good effects of digitalis without the bad ones.

Dr. F. P. Kinnicutt believed most cases of acute nephritis due to exposure or infection tended to recovery of themselves, and only needed rest in bed, a milk diet, and external warmth. He agreed that it was of most importance that we should modify the intensity of the inflammation in the kidney and the disturbance of the circulation. Sudden death from heart failure was not very infrequent in acute nephritis without there being uræmia at the time, and in these cases a marked dilatation of the left ventricle had been found by Dr. Goodheart, of Guy's Hospital, London, showing that the heart had become completely exhausted by the effort of pumping the blood through closely contracted capillaries and arterioles. On this account he never gave digitalis, but used as heart tonics either strophanthus or sparteine together with nitroglycerin.

Dr. J. W. Roosevelt remarked that in subacute nephritis we found in different patients a number of very different indications; thus in a certain class a high arterial tension was a source of much danger, not in itself, but by causing the heart to become overworked. However, to relieve this condition by using drugs to dilate the capillaries was of value only as a temporary expedient when immediate danger threatened. The treatment which could give real relief must in his judgment be that which re-established the flow of urine from the kidney. As Dr. Delafield had said, coma and convulsions were to be feared early in the disease, and in alcoholic patients, he would add, chiefly.

In the long-lasting cases patients died in exhaustion with typhoidal symptoms, not in uræmia. The latter condition, then, was not due to suppression of urine, as was commonly supposed, even when long continued. He had observed that acute uræmic attacks came in two quite different classes of cases; in some patients coma and convulsions were accompanied by a high arterial tension, but in others sudden coma would be developed without any increase of arterial tension, and in these cases heart stimulants were of most service.

Dr. J. E. Winters said, in reference to Dr. Delafield's advice that patients with subacute nephritis should seek another climate, that, however desirable this might sometimes be, we had to do something for a large class of patients who either could not afford or were in no condition to go away from home. In these cases abundant exercise seemed to do the most good, especially when taken together with all natural means by which the flow of urine was found to be increased, for this was in his experience the best test of an improved condition. Whenever patients came undes his care at the beginning—that is, suffering from acute nephritis—his first care was to keep them in bed for weeks running, or as long as the general nutrition could be supported under these conditions and the amount of albumin in the urine not become increased. Rest and keeping the functions of the skin active, together with a diet in which an excess of albumin was not present, were to him the most important elements in the treatment of acute nephritis. He allowed only the white meat of fowls, milk, and fish of delicate fiber, and encouraged the liberal use of fats and oils, especially cream and cod-liver oil, which he considered of great value. He doubted whether iron in the anæmia following nephritis had the same effect as in anæmia due to other causes; it had not seemed to him to improve the condition of patients to whom he had given it, appreciably. He agreed with Dr. Delafield that the escape of serum into the subcutaneous tissue and into the cavities of the body was apt to afford relief to the nervous and cerebral symptoms, and lessened the tendency to uræmia, as if some of the poison which the kidney could not dispose of was filtered out of the general circulation.

Dr. Laurence Johnston spoke strongly of the value of pilocarpine in acute nephritis; he had employed it for a number of years in the uræmia of pregnancy, and here his results had been most favorable. Thus a lady in the eighth month of gestation had been suddenly seized with uræmic convulsions, which had been repeated five times in the next six hours. On arriving at the house he had given the sixth of a grain of the hydrochloride, and had repeated the dose every twenty minutes for three doses, and had given the fourth after two hours and a half. It had caused profuse sweating without in the least enfeebling the action of the heart. After six hours there had been a free flow of urine. The remedy was also of use in the non-puerperal forms of nephritis. He had seen complete relief follow its use in coma accompanying acute bronchitis. There was no danger in using it in any recent case of nephritis occurring in a well-nourished patient, but, on the other hand, it was never to be given to weak and debilitated patients.

The President thought the first thing to be taken into consideration when dealing with acute nephritis was the general condition of the patient apart from the renal symptoms, as determined by his age, predispositions, and habits. The same treatment would certainly not be called for in an infant and in a man of fifty. However, as a rule, rest in bed, moderate purgation, and liquid diet were enough, unless the accumulation of excrementitious products was such as to threaten convulsions. For decreasing arterial tension he preferred calomel and the saline cathartics, and added counter-irritation over the kidneys and stimulation of the skin functions.

Subacute nephritis was a difficult thing to handle well. He had long opposed the use of any measures tending to deplete the patient, such as hydragogue cathartics. To improve the general nutrition should be the main object, and, he would add, iron did not do this. A change of climate was of an importance hard to overestimate. In regard to the giving or withholding of cardiac tonics, including digitalis, he would say that whenever, in subacute nephritis, the heart was found to be failing, we had a good reason for resorting to some form of cardiac stimulant, and continuing its use as long as it increased the absorption of excrementitious materials from the tissues and the production of urine. When the weakening of the heart is due to the accumulation of poisons in the system, rather than to degenerative changes in its wall, he knew of no drug which could keep such a heart at work as well as opium in small doses.

Dr. Delafield replied to Dr. Jacobi in regard to his having recommended coffee or caffeine. He had only quoted from a French writer who advised its use. As to the great value of the bichloride of mercury, he could only say that it was an old stand-by, and it was perhaps a rule to give it; but he had never been satisfied that it alone was likely to improve the patient's general condition, and thought it hard to say how much it really contributed to the result when other measures were brought to bear. He agreed with Dr. Jacobi that subacute nephritis following diseases other than scarlet fever was much more common than was supposed; also that many cases passed through their acute stage unnoticed. As to the relief of high arterial tension, it was necessary to distinguish between acute and subacute nephritis in the treatment. In the condition as it occurred in acute nephritis small doses of sulphate of magnesium or of calomel were to be given till the bowels began to move, and the relief so obtained could be maintained by the use of aconite. In subacute nephritis he would use the nitrites and chloral. While digitalis was not a good drug in acute nephritis, it could be used in the subacute cases under the conditions pointed out by the president. He did not agree with Dr. Winters in the importance he attached to the amount of albumin in the urine as a test of the severity of the disease. Just as in subacute pleurisy, albumin in the urine was an exudation accompanying an inflammation, and it varied in amount in different cases without strict reference to the temperature or the state of general nutrition in the body, The patient in either disease might be gaining every day, while yet the amount of albumin escaping at the site of the inflammation continued as large as ever. According to his experience animal food was suited to the majority of cases, and it was not important that the amount of it given should be gauged by the appearance of albumin in the urine. As to iron, he thought if the blood was tested for hæmoglobin, and if the number of its red cells was counted, it would appear that some good was accomplished by the use of iron in the anæmia of nephritis, although the immediate symptoms and appearance of the patient might not at once be altered.—*From the N. Y. Medical Journal.*

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REVIEWS.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION. For the year 1888. Volume V. Edited for the Association by Alfred Ludlow Carroll, M.D., of Richmond County, Concord, N. H. Republican Press Association. New York: J. H. Vail & Co. 1889.

In the style in which the papers are presented to its members, and in the care and thought bestowed on them, the New York State Medical Association has no superior and few equals. This is not remarkable when we consider the fact that a large portion of the best talent in the State—talent that has in a number of fields made itself known to the world—belongs to this Association. Each year its volume of transactions is a welcome visitor to our table, and it is not infrequent that we turn to the papers in its pages to get the latest and the best information on some topic of practical moment. Too much credit cannot be given either the Association for its valuable work, or the editor for the thoroughness with which he has done his part. The typography and binding are excellent.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION. Volume I. Session of 1888. Birmingham, December 4th–6th, organized 1887. Birmingham, Ala. Press of Caldwell Printing Co. 1889.

This Society, consisting of over one hundred members, promises to do good work. This first volume of its proceedings, contains some excellent articles. Asepsis and antisepsis seem to have received the most careful consideration, and the papers on these subjects are of especial practical value to country practitioners. We congratulate the Society on its progress, and the committee of publication on its work.

THE RADICAL CURE OF HERNIA. Henry O. Marcy, M.D., LL.D., of Boston, Mass. Surgeon to the Private Hospital for Women, Cambridge, etc., etc. 1889. George S. Davis, Detroit, Mich.

Dr. Marcy has presented us with a useful member of the "Physician's Leisure Library" series. Especial stress is lain on the use of the "buried antiseptic animal suture," a method used with great success by the same author in perineorrhaphies. There are a large number of quotations from the prominent surgeons of this country, and the features they consider important in kelotomy. The etiology and anatomy of hernia are well stated, and the author has chosen some good wood cuts and gotten up others.

The book is especially useful to American surgeons as giving the latest results of their fellows in the operative treatment of hernia. Of course, some of the foreign operators are mentioned. For the subject with which it deals it will be found an exceedingly serviceable book.

LECTURES ON BRIGHT'S DISEASE. By Robert Saundby, M.D., Edin., Fellow of the Royal College of Physicians, London, etc.. With fifty illustrations. New York: E. B. Treat, 771 Broadway, 1889.

These lectures show that a large amount of labor has been expended in preparing them. They are not entirely new, but they have been carefully rewritten. The sources from which the author draws are innumerable. The illustrations are fair. The chief feature of the book is the succinct manner in which the author summarizes a number of the chapters. The cases quoted are of interest and add to the usefulness of the work; and the book as a whole is one of the best selections that has been offered in the series of "Medical Classics."

SURGICAL BACTERIOLOGY. By Nicholas Senn, M.D., Ph. D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago. Philadelphia: Lea Brothers & Co. 1889.

This is a wonderfully interesting and instructive little book. The revolution not only in surgical pathology, but also in the practice of surgery, due largely to the advances in bacteriology, naturally make the subject one of great interest to a large part of the profession. The amount of information garnered from every source, makes the book invaluable, and it is not only to the surgeon that it will prove instructive. The chapters on "Hereditary Transmissions of Microbic Diseases," "Do Pathogenic Microörganisms Exist in the Healthy Body," and "Sources of Infection," are worth the price of the book to every practitioner of medicine. We had expected to quote some remarkable facts from the text but have not the space at our command. The work is thoroughly scholarly, is beautifully gotten up, and altogether worthy of the closest study and thought.

PHYSICIANS' AND STUDENTS' READY REFERENCE SERIES. Synopsis of Human Anatomy: Being a Complete Compound of Anatomy, Including the Anatomy of the Viscera, and Numerous Tables. By James K. Young, M.D., Instructor in Orthopædic Surgery, and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. Philadelphia and London: F. A. Davis, Publisher. 1889. Price $1.40, net.

All of the manuals, or most of them, that are being published, are gotten up in nice style and have a good deal to commend them. The present has many excellent features, the best being that it is unusually complete, indeed a close abstract of Gray, and it also has some excellent tables, especially the one on the cranial nerves. Its conspicuous fault is the poor execution of the woodcuts; but, as the book will most likely be used in connection with some larger work, this will not prove a serious drawback.

SWEDISH MOVEMENT AND MASSAGE TREATMENT. By Hartvig Nissen, Director of the Swedish Health Institute, Washington, D. C., etc. With Twenty-nine Original Wood Engravings. Philadelphia and London: F. A. Davis, Publisher. 1889. Price $1.00, net.

This little manual proposes to set forth the principles of Swedish movement cure and massage. If it had restricted itself to this, it would not have been quite so ludicrous; but for it to group three to a half-a-dozen affections and then give a prescription for the cure of all, is a little too much for the initiated. For example: Group I.—Constitutional Diseases: A. Chlorosis and anæmia, neurasthenia, hysteria, and hypochondria. Prescription I.: 1. Shoulder rotation and chest lifting—sitting. 2. Foot rotation—double—reclining. 3. Stomach vibration—reclining—knees bent. 4. Forward arm rotation—sitting. 5. Trunk rotation—astride sitting. 6. Knee flexion and extension—sitting—resistive. 7. Stomach friction—lying. 8. Back percussion and friction.

"Conscript Fathers!" Most of us would prefer the whole list of troubles to the cure, especially when it is followed by another "prescription" with *nine* similar doses.

But there is undoubtedly some good in the system, however much humbuggery there has been in the way it has been offered the public by many of its practitioners. If there is any virtue in this book it is that it shows us on what an insignificant basis so much quackery is founded.

PHARMACY AND THERAPEUTICS.

Codeine to Allay Cough (Vierling Kersey, M.D., Phœnix, Arizona).—In the *Pittsburgh Medical Review* for February, 1889, a brief article appears upon the use of codeine, by Dr. Fischer.

Judging from my own experience, previous to 1887, and by my observation of other physicians, I must conclude that for some reason which I know not, there has existed—nay, there does still exist a decided prejudice, or, to say the least, a great indifference to the valuable drug under consideration. Therefore, with the intention of adding my testimony to that offered by Dr. Fischer, in favor of the use of codeine, I may state the experience that I have had with it. First, I may say, however, that I had little knowledge of the drug, other than that obtained by reading of it among the alkaloids of opium, and seeing that as a narcotic, analgesic, and in fact, in all important respects, it ranked far below morphia. Owing to the extremely dubious nature of the drug, as reported in works on materia medica, the average practitioner has little to induce him to try the drug in any given case, especially as it is not, in many instances, possible to obtain a reliable preparation without delay.

Two years ago, I began the use of codea, after having exhausted the benefits of laudanum, morphia, chloral, and various mixtures of one or more of these drugs with other remedies.

The use of morphia was persisted in until from three-fourths to one grain was needed to secure sleep, which was not refreshing, and was followed by nausea, giddiness, lack of appetite, constipation, and great mental depression. I began with one grain of Merck's codeine sulphate, and for over a year never increased the dose, nor failed to obtain a comfortable, nearly natural sleep without coughing to amount to anything. The sensation that came on, within fifteen or twenty minutes after taking one grain of codeine sulphate, was like that we experience when by pressure upon a nerve we cause an extremity to "go to sleep," except that the tingling was general and more transient, and followed by a sense of complete numbness and loss of general sensation. For instance, I could hardly tell where my foot or hand lay, or what relation they bore to the other extremity, even when they lay against or upon their fellow; except I were to move them, which required considerable effort of the will, as the whole being seemed most luxuriously easy, and any exertion was very distasteful.

The mental state was one of great comfort, and pleasant, hopeful thoughts, in which the reason was more active than the imagination. Efforts of memory, and of the reasoning faculties were seemingly easy of making, and every line of thought appeared surpassingly clear and logical. The pulse was fuller and slower, and the respirations easier, slower, and not so deep. After half an hour of this stage, the latter part blending with the stage above described as accompanied by anæsthesia and numbness with loss of general sensibility—sleep, usually very quiet and dreamless, and lasting until morning (eight or nine hours) followed.

The waking was unattended by the dullness and heaviness accompanying the waking of sleep from morphia. The head was clear, mind easy and hopeful, appetite good, bowels normal, and general condition about as normal as it is in case of a phthisical patient.

During the two years (nearly) that I have used the drug, it has never failed to permit me to gain a refreshing night's sleep—solely by restraining the cough—as it does not appear, when taken in daytime, to induce any drowsiness or symptoms of hypnotism.

It has never, that I can discover, affected my digestion, appetite, or bowel-action. Once only, when I had to send to Los Angeles, from Phœnix, for some of the drug, was I disappointed in the action. I believe that an inferior article was sent, as the use of it invariably caused extreme and general pruritus, and a very excitable state of mind, accompanied with heat of head, throbbing of temples, and great restlessness. However, the cough was controlled, and after half an hour or more of the unpleasant symptoms they passed away, and the usual good sleep ensued.

I take, after nearly two years' use of the drug two grains at retiring, in pill form, made with ext. gentianæ. Have occasionally taken three grains, but not regularly. I am satisfied that in no material respect has my health been injured by the use of this drug. I believe it posseses the power of partially paralyzing the nerves of the lungs and throat, that are irritated by the presence of sputa, so that a cough must at once follow. It has feeble hypnotic powers, and I think no analgesic powers worth mentioning.

I should not hesitate to use it as a means of allaying hard or painful coughing, in *any* case, in doses of from one half to five grains. There is no special reason for using it in form of suppositoria, that I can see, as it is neither bulky nor bad tasting when made into pills.

OBSERVATIONS ON THE USE OF GLYCERIN ENEMATA IN CHILDREN.—During a period of four months glycerin enemata were used at the Evelina Hospital for the treatment of constipation, to the exclusion of purgatives. The children were not allowed to pass more than two days without an action of the bowels. A carefully-prepared table is submitted, showing the result of two hundred and fourteen injections in sixty-three children. One drachm of glycerin was given in one hundred and fifty-six cases, one drachm and a half in forty-eight, and two drachms or more in but nine.

In one hundred and fifty-four instances the injection was followed by normal motions, in twenty-six they were loose, and in twenty-four of more than normal consistency or composed of scybala. In ten only did the enema fail to act. In no instance were there unpleasant symptoms, either local or constitutional. No child was found whose bowels failed to respond to the glycerin stimulation at one time or another.

As regards the time of action, ninety-five injections were followed by motion within five minutes, ninety within thirty minutes, while with the remainder the time varied from thirty-five minutes to eleven hours. The failures or cases of delayed action were in tubercular patients or those who had undergone operation, and were therefore restrained from exercise or movement.

After a brief summary of the action of various cathartics in common use among children, the author expresses himself as very favorably impressed with glycerin enemata, which are easy of application, unattended by pain, quick and natural in action, and followed by but few failures.—*Lancet.*

The Action of Iodoform on Pyogenic Microbes.—In the Polish weekly, *Przeglad Lekarski*, Dr. Justyn Karlinski publishes a series of his interesting bacterioscopic researches, undertaken to study the influence of iodoform on pyogenic bacteria. The gist may be given thus: 1°. Iodoform does not manifest any direct parasiticide influence on any microbes of suppuration, since neither their development and growth, nor their vitality, nor their pyogenic properties show any alterations, even after a prolonged contact of the microbes with the medicine. 2°. Its beneficial effects in surgical practice are dependant solely upon its drying action on the field of operation, in the sense that the drug enters into some combinations with proteid bodies, and forms such compounds which represent an unfavorable soil for the growth and development of the micro-organisms in question. 3°. Iodoform, however, arrests, or, at any rate limits, putrefacation, and consequently may protect the patient's system from a general septicæmic infection. The latter property of the drug certainly fully deserves attention on the part of the practitioner.

SANITARY.

Over Pressure in Schools. Extracts from an Address Delivered at the Opening of the Nineteenth Annual Meeting of the Medical Society of the State of California, April, 1889. By James Simpson, M.D., President, San Francisco.

Do our boys and girls study too much? Are the educational methods of the present day proving injurious to the mental and physical well-being of the rising generation? The affirmative belief has of late years been expressed by an influential section of the medical profession, and through them it has filtered into the public mind. The medical press has teemed with the subject, viewed chiefly from the alarmist side. Overwork at school, it is claimed, is one of the most faulty conditions of modern life, developing the nervous system at the expense of the physical, and lowering the standard of health in our coming men and women. Among the formidable list of disorders caused by cramming and forcing the minds of children, one writer enumerates neuralgia, nervous prostration, dyspepsia, spinal curvature, myopia, exhaustion, "delicacy," somnabulism, fainting fits and insanity. Another solemnly warns us that the reproductive powers of our young women are seriously menaced from the same cause. The annual preparation for school or college examinations, and the high-pressure forcing processes that are resorted to on such occasions, are regarded as especially baneful. In girls' schools, the struggle to prepare for and pass successfully these examinations has been held responsible for a Pandora's box of ills, among which are hysteria, amenorrhea, sterility and displacements. A writer of a poetical turn has thus described the effects of this period of "storm and stress" in a girls' school:

> One has a headache, one a cold,
> One has her brow in towels rolled,
> Ask the complaint and you are told,
> Next week's examination.

A few years since, Dr. Crichton Browne, a mental physician of some distinction, was commissioned to investigate this matter in the public schools of England. He drew a most dismal picture of the deteriorating and injurious effects of the modern educational system upon both body and brain, and predicted that the evil, if unchecked, would entail disastrous consequences on future generations. This report furnished the keynote to a wide-spread agitation of the question. It is well to bear in mind that Dr. Browne is a specialist in mental disorders; and it has been intimated—of course, I would not say such a thing myself—it has been intimated that specialists are apt to imagine that most people either are or ought to be afflicted with their own particular speciality.

What may be called the alarmist view of the question may be best stated in the following words of Dr. Bell, of Brooklyn: "The too early enforcement of the child's mind must be always recognized as an evil of great magnitude. By excessive or premature exercise of the brain the flow of blood to it is increased, and its powers stimulated and perhaps exalted for a time, but on account of its softness and yielding nature, it is liable to plethora and consequent blunting of its powers. Meanwhile, the excess of blood to it has been withdrawn from the other organs, and waste of substance, muscular weakness, and stunted growth of body follow, with a possible premature development of the brain, and the mental precocity of short-lived energy. Indeed there is no limit to the baneful results of overworking the brain during school life. It not only involves an unsound body and a feeble mind, but a greatly depraved intellect."

Without stopping to inquire into the correctness of this theorizing, it seems to me that much of the outcry about over-education is superfluous and ill-founded. There is no sign of physical degeneracy in the youth of California, from this or any other cause. The truth in this matter, as in most others, lies midway between the two extremes.

I would not pretend to question the fact that excessive mental exertion is bad for the brain, be that brain young or old. I am also ready to allow that there should be a more careful discrimination in the enforcement of study, particularly in girls, and further, that children too eager for study should be systematically repressed, while those of infirm physique should not go to school at all. Much remains to be done, moreover, in improving the hygiene of the school-room. But, granting all this, I maintain that well-directed brain work is good for the young; good not only mentally, but morally and physically. Education, says Huxley, is the formation of habits, so that acts which at first require conscious effort, eventually become unconscious and mechanical. In the formation of these right habits we must not be led away by the fallacy that mental labor interferes with bodily development. Where the hours of study are properly limited, there is no antagonism. Taking brain-workers as a class, their physique is found to be up to, if not above, the average.

During the past half year I have made careful inquiry of the principals and teachers of our public schools on this question. I have sought to ascertain from those in close daily contact with school children, what reason there is to fear, under our present educational system, that over-pressure exists, and whether instances have come to their knowledge of headaches and ill-health arising from crowding or overtaxing the brain. Teachers are, as a rule, fair physiologists, and possess a good general understanding of the laws of health, and their judgment is entitled to much credit. I found a consensus of opinion which strongly negatived the supposition ofda nger ahead from this source. True, among the many different natures that go to make up a class of school children, there will be found some who require to be held back, just as there are others who must be persistently urged forward. The conscientious teacher will not fail to readily single out the eager, ambitious, incessantly studying youth, and by a system of supervision and cautious repression preserve the immature brain from overstrain. "School headaches" are generally to be ascribed to the hasty eating of cold and indigestible lunches during the noon recess, or sitting in an improperly ventilated school-room.

From an unbiased study of the subject I have come to the conclusion that the ordinary school curriculum is not more stringent than it should be, to provide that mental training and intelligence necessary to the modern man and woman. Much of the outcry about the matter has been based on assumptions that are fanciful rather than real. My medical experience among school children accentuates this belief. I find that their sicknesses arise from causes foreign to the school-room in nine cases out of ten. The frontal headache that scholars sometimes complain of is generally due to constipation or indigestion; perhaps from overstrain of the eyes. More damage is done to the eyesight of children by allowing them to read at home in the evening by a deficient or faultily arranged light than by any other cause. In girls I have frequently found ill-health and cephalalgia ascribable to neglect of the bowels, and lack of exercise induced by the vicious idea that it is unbecoming to run or romp.

Our school methods are yet far from perfect, however; and the same may be said, with much more emphasis, of our school buildings. I will briefly indicate the direction in which improvement should move. The individualized training of the young is the ideal form of education. Both the hours and the routine of study should be regulated according to the needs and idiosyncrasies of the children. The idea that a given number of scholars may be put through the same course of study in the same time, must be abandoned. In girls' schools, some relaxation of discipline during menstruation ought to be observed. The first evidences of ill-health in school children must be properly attended to. Let the school-room doors be shut against children under seven years old. Time for digestion should be as carefully provided as time for recreation. Home lessons should be abolished. I agree with Dr. Bell that the school day should not be more than six hours, and that not much more than half that time should be devoted to hard study. Dr. Isaac Ray wisely says, and the remark applies more forcibly to children than it does to adults, that "few can exceed six hours a day of close mental application without seriously endangering the health of the brain." In the national school system of the countries of Europe, where education is compulsory, there is a regulation known as the half-time law, under which a number of children, without regard to age, get only two and a-half hours' schooling a day. The rule works well, proving of great advantage in poor families, where the boys can thus work during a portion of the day and at the same time continue their studies.

The architecture of school buildings has received much attention lately. In San Francisco, sunshine is as indispensable as air itself, and no school-room should be deemed fit for occupancy that has not a southern exposure. In the construction of our school-houses, the free access of sunlight with its purifying and life-giving influences, should be a matter of the first consideration. As to light, Dr. Loring, of New York, reckons that a class-room twenty feet square should contain not less than eighty square feet of window. It is an established fact that a child requires as much breathing space as an adult. Fully 250 cubic feet of air space should be provided for each scholar. Less than that compels the re-breathing of contaminated air, no matter how thorough may be the arrangements for ventilation.

A diligent search, from the physician's standpoint, into the workings of the modern educational system has led me to regard it with trust and admiration, and has taught me that much of the cry about over-pressure is pure sensationalism. Those who repeat that cry are perhaps sincere, but they often do so without a practical knowledge of the subject, stirred by the hasty fervor that seizes us when we discover a wrong that wants righting. The public looks to us for carefully balanced and sifted statements on these questions of general import, and it is regrettable that physicians who have been held up as authorities have solemnly warned them that, in such healthful exercise of the mental cortex of our youth as is provided in school discipline, danger and destruction lurk. Let us be sure we are right before sounding the note of alarm. With the pleasing methods of teaching now in vogue, with the ever-advancing observance of the laws of cerebral hygiene, and with the better provisions for the health and comfort of scholars, most children are better situated in the school-room than at home. Let the contrast be made, as it often must be, between the clean, pleasant class-room on the one hand, and the foul atmosphere, actual or moral, of an ill-kept home on the other. The school-house of to-day, conducted by the teacher of to-day, is the best possible nursing place for strong, broad-minded, intelligent American citizens.

Who is there within sound of my voice who has not, while driving along our streets, stopped and watched with interest that happy scene—a school-house disgorging its contents? As the merry throng comes trooping out, the sight stirs old memories within us and recalls the strange, far-off time when we, too, were light-hearted boys or girls, with no ambition higher than our marbles and toys. Notice the youngsters well, how lithe and well-built and strong of limb they are, how sturdy and rosy-cheeked. Viewing them critically it will be hard to resist the feeling that the gloomy prognostications of morbid specialists have no application here, and that with such material for our future men and women we need in no wise despair of the Republic.

HYPNOTISM.—In view of what has occurred in this city lately, I deem this a proper occasion to allude to the dangers of the indiscriminate practice of hypnotism. During the past winter a number of exhibitions have been given by a so-called professor of mesmerism, in which persons taken from the audience were placed in the mesmeric sleep and caused to perform antics for the amusement of the spectators. The success of the hypnotizer in thus depriving individuals of their reason and volition, and substituting his own therefor, was no doubt enhanced by contagion and expectancy; each succeeding victim, seeing those before him so readily hypnotized, felt it useless to hold out against so potent a necromancer, and yielded without a struggle.

These exhibitions are against puplic morals, and should be prohibited. The persons who thoughtlessly submit themselves to the manipulations of the mesmerist have no conception of the harm they are incurring. In Germany and Italy public exhibitions of hypnotism are forbidden by law. A movement is also on foot in France to interdict them. The eminent Charcot, of Paris, himself a close investigator into this class of phenomena, calls attention to its dangers, saying: "Medicine has taken possession of hypnotism, and it is only through her that such an agent can be made of use to mankind and prevented from working injury to the human race." Maudsley remarks in the same warning voice: "It is not a mere harmless amusement for one who is susceptible to the hypnotic trance to suffer himself to be frequently practiced upon, for there is danger of his mind being weakened temporarily or permanently. After coming out of the trance a little while must elapse before his will recovers its power. He remains unduly susceptible to the suggestions of others, and too easily influenced by commands. In the end he is likely to lose all control over his own mind and to become insane."

In hypnotism the ordinary functions of the mind are suspended, the reason, judgment and will are held in abeyance and the person becomes a passive instrument in the hands of the manipulator, the creature of his whims and wishes. He thinks, feels and acts only as it is suggested that he shall think, feel and act. He has parted with his personality, and attempts to do whatever he is commanded in a blind, unconscious way. Only weak-willed people are subject to the hypnotic infatuation; the strong, self-reliant man or woman laughs his efforts to scorn. Baron Reichenback, one of the early investigators, soon discovered this, and selected for his "sensitives," as he called them, young persons of inherited or well-marked nervous temperament. After repeatedly operating upon them he found that they grew to be very easily affected, and he gravely records how they would at length drop into an unconscious state, if he happened to glance in their direction or shake a finger at them.

The hope entertained by Charcot, Braid and other psychical experimenters, that hypnotism may eventually prove of use in medicine, and more particularly as an anæsthetic in surgery, does not seem likely to reach fruition. Now and then a case is recorded of a surgical operation performed in the hypnotic state without pain, but its use in this direction is capricious and has not been brought within the domain of law. An agent so uncertain, and of so limited application, holds out but little promise of ultimate therapeutic value. Of its potential evils, however, if left in the hands of ignorant charlatans, there can be no doubt. In a person of weak mental fibre, it tends to foster the neurotic temperament and evoke the unstable and hysterical. By its repetition, the supremacy of the will and the dominance of the higher brain centres, all that make men better than the beasts of the field are endangered. Nothing could be better calculated to breed mental invertebrates.

As physicians we are not only healers of physical ills, but we are conservators of mental sanitation, and as such it becomes our duty to endeavor to mould public opinion against these indecent exhibitions. They are clearly against the welfare of society. There may be some who are led thither by an honest desire to witness the demonstration of a little-understood phenomenon, but as a general thing it is a morbid curiosity that attracts the audience. The infatuated individuals who yield themselves up to the power of the hypnotizer are not aware of the risk they are running. Not only is the abject surrender of body and mind to another's keeping, and for an ignoble purpose, unmanly and degrading, but it works irremediable harm to the cerebral controlling centers and invites mental imbecility, and I hope every physician will discountenance all performances of this character, both by precept and example.

MISCELLANEOUS.

METHOD IN THE TREATMENT OF EPILEPSY.—Kowalewsky, by a systematic course of treatment, has succeeded in making a number of cures of epilepsy in those in whom the attacks have been present less than ten years. The time required, which he usually divides into four semesters, is usually twenty-four months. He selects the form of bromide most suitable to the case, and during the first period (six months) gives a drachm of the salt in combination with three to five grains of the sodium iodide in the twenty-four hours. He administers the remedy, well diluted, in three equal doses, in the morning, before dinner, and at night. The dose is to be lessened or intermitted in case of adynamia. In female cases the treatment is stopped during the catamenia. The patient is allowed a good supporting diet, milk and vegetables to be preferred. During the last three months of the semester the patient is usually free from the attacks. During the second period the treatment is to be the same as that of the first.

Before it is begun, however, there is an intermission of from two to six weeks, when the medicaments are withheld. During the third semester the sodium iodide is omitted, and doses of five to ten grains, morning and evening, of the bromides are given, the same regimen and diet being continued. In the last period he commences with five grains of the bromides per diem, gradually extending the time between the doses, so that toward the end the patient receives the five grains at varied intervals even up to six days' intermission. The bromides are then entirely discontinued, and the patient receives small doses of trinitrine, the tincture of simulo being substituted in some cases. In the beginning of the treatment alcohol must be absolutely excluded, even in medicine; attacks have been brought on by the administration of only a few drops. Tea is allowed in moderation, but coffee, chocolate, etc., must be dispensed with. Should the case be complicated with tuberculosis, scrofula, syphilis, etc., it should receive treatment appropriate to the affection. Electricity in certain cases has proved a valuable adjuvant, but it is contraindicated where there is any tendency toward cerebral hyperæmia.

MANUAL EVACUATION OF THE BLADDER.—Dr. Julius Heddaeus finds that, in many cases, he is able to relieve distention of the bladder by manual compression without resorting to the use of the catheter. He recommends two modes of operation. In one the patient lying upon his back, flexes his thighs upon the abdomen, while the physician, facing him, lays the right hand upon the left, and the left hand upon the right side of the abdomen near the middle line, in such a manner that the tips of the thumbs are brought together, and rest upon the symphysis pubis. The other fingers grasp the summit of the bladder, and are pressed gradually downward until they approach the thumbs. A continous pressure is thus exerted towards the neck of the bladder, the viscus gradually shrinks and the urine escapes, often in copious jets, from the urethra. According to another method the physician stands with his back to the patient, lays the right hand upon the right side, and the left upon the left side of the middle line, so that the ulnar borders lie upon Poupart's ligament and the tips of the fingers above the symphysis. The thumbs then compress the bladder from above downward. The author does not advise this method to be used in cases of enormously distended bladder, for fear of causing a rupture of the organ. Abdominal inflammation, acute pain and pregnancy also contraindicate compression, which becomes difficult, if not impossible, in cases of extreme corpulence or tumors of the abdomen. But he finds it valuable in cases of impaired tonicity of the detrusor urinæ, whether associated or not with spinal disease and relaxation of the abdominal muscles. The method is appropriate, also in the incontinence with retention which accompanies paresis of the sphincter vesicæ. Whether it is capable of relieving spasm of the sphincter must be left to the future to determine. He recommends the proceeding as, at least, free from danger and pain. It possesses a secondary advantage, in that it may easily be taught an intelligent layman, and thus secure regularity of evacuation without constant dependence upon the physician. Again, there can be no fear of causing decomposition of the urine, which will sometimes occur after catheterization in spite of the utmost endeavor to secure cleanliness.—*Deutsch. Med. Zeitung*.

THE JOY OF LIVING.—This depends, according to DR. Haig, upon the excretion of uric acid (*Practitioner*, Nov., 1888). A certain form of headache bears a close relation to such excretion, and the author's researches have shown him that mental depression and its opposite condition of well-being and exhilaration are also dependent upon the amount of uric acid in the blood. It has been noticed that a number of persons suffer from mental depression and heaviness at the time of day when the excretion of uric acid is at its greatest; that is, in the morning between breakfast and lunch. This has been called the "alkaline tide." A corresponding condition of depression may be produced artificially, by giving the alkalies. By giving acids sufficient to overcome the alkaline tide the process may be reversed at any time; heaviness and low spirits being thus made to give way to a feeling of mental clearness and enjoyment of life. The author then recommends as treatment for mental depression one or two doses of fifteen drops of a dilute mineral acid. [It is satisfactory to know that the way we regard the world or the mood we happen to be in, is merely a matter of the byplay of acid and alkali in the system. And for once in the history of therapeutics, the remedy is so pleasant as to be absolutely enticing. Presuming that a vegetable acid is allowable it seems delightful to think that to dispel a fit of depression, we need simply order a lemonade; to drive dull care away, we take a glass or two of claret, and when the old haunting question, "Is life worth living?" obtrudes itself, we can exorcise it by eating an orange. Possibly this objectionable overplus of alkali in the economy is the cause not only of physiological depression of spirits, but also of pathological melancholia. If so (and Dr. Haig will pardon me if I am making too wide an application of his interesting discovery), then the location of the new State Insane Asylum near San Bernardino, in the very heart of the citrus belt, seems an occurrence so fortunate as almost to deserve to be called an inspiration. For there the doctor's theory can be put to a decisive test, and the treatment of melancholia by the persistent administration of oranges and lemons can be pushed to its utmost legitimate limits.

ATHLETICS AND SCHOLARSHIP.—Richards, of Yale College, has made a study of the records of 2,425 students in order to determine, if possible, the relations of athletics in Yale to scholarship. The general result is that the athletes fall slightly behind the non-athletes in scholarship, but not so much as to demand a suppression of such exercises. In some branches of athletic exercises the students who engage in the sports are above the average of the non-athletes in scholarship. For the slight difference noted between the two great classes, there may be greater strength and endurance or physical development compensating for the loss of scholarship.

ELECTRO-PHYSIOLOGY.—At Owens College, Manchester, Stirling lately delivered a lecture on the electrical properties of the tissues, but especially of those composing the nervous system. There are about fifty species of fishes which are known to have specially modified organs for the generation and discharge of electricity. These organs when at rest do not discharge their electricity; but if the animal be irritated, electrical shocks are discharged, which in some fishes are very powerful indeed. By means of electrical discharges these animals not only stun their prey, but they ward off the attacks of their enemies. The animal may discharge its batteries voluntarily, but after having done so for a considerable number of times the electrical organs become fatigued, just as muscles after severe exercise are fatigued. At first sight it might seem remarkable that certain animals are provided with structures which evolve powerful discharges of electricity. This, however, is not by any means the most remarkable fact. When we know that the whole of the body of the animal is traversed by the electrical current at the moment it is discharged, it does seem far more wonderful that the tissues of the animal itself are not thereby affected; not even a muscle is caused to contract, although the discharge must necessarily traverse the nervous system as well as the muscles. The animals, therefore, have an immunity from the effects of their own shocks. Darwin admitted that the presence of these organs in a limited number of fishes was a fact not easily explained on the evolution hypothesis. Recent researches, however, have shown that the electrical organs are really modified muscular organs, or the terminations of nervous structures in muscles. This fact greatly simplifies the problem. Muscles and nerve, however, evolve electricity in the living condition; and a variation of the electrical conditions of a muscle, a nerve, or even of protoplasm generally is one of the best signs of the vital activity of these structures. With Galvani's experiments on the twitchings of the limbs of frogs, there commenced the investigation of electrical phenomena, which have led to such splendid results, not only in physiology, but to the development of new means of producing electricity and its numerous applications in the arts. The lecturer demonstrated the classical experiments of Galvani, Volta, Noboli, Du Bois Raymond, and others, showing historically on what lines our present knowledge of animal electricity had been reached.

ARE TOWNSMEN OR COUNTRYMEN THE HEALTHIEST?—Quite a remarkable paper on this subject was recently read at the British Association meeting at Bath, England, by Dr. G. B. Barron; remarkable because, though the doctor's experience leads him to the assertion that countrymen are the healthiest, the statistics he presents, as will be seen, do little or nothing to sustain him, and, on the broad question, authorities equally reliable have admitted that, class for class, there is no season for the averment.

Town life, Dr. Barron says, leads to degeneracy because of bad air and bad habits. "Absence of pure air acts upon the animal economy in much the same way as withdrawal of light from plants, the result being pallor and feebleness and lack of constitutional vigor. This effect ramifies in every direction; the tissues of which the human body is composed lose their tenacity and contractile power, and even mental integrity may be more or less affected." In the interests of the Anthropometric Society, the doctor measured 300 men, city men and countrymen, and admits that he failed to discover "any sstisfactory evidence to lead to the conclusion that, in actual inch measurement, the townsmen were appreciably inferior."

He says, however, that the countrymen were superior in "tone of muscular activity," but does not say if this fact is sufficient warrant for calling the townsmen "degenerate." Mr. Francis Galton measured 9000 men at South Kensington during the health exhibition, comparing the average with the men of Cambridge University, and surely any unprejudiced person must admit, after studying these figures, that the doctor could not have done worse in his attempt to sustain his ground than to offer them; for it should be remarked that college men are always young and usually vigorous, are not likely to come from country than city, and that 9000 men examined by Mr. Galton were taken haphazard, of all ages, most of them, poor, perhaps unused to proper food, perhaps living under peculiarly unfavorable conditions. Here is the table:

	Height.	Weight.	Breathing.	Pull.	Squeeze.
Cambridge - -	69·9	153·6	254	83	87·5
Kensington -	67·9	143·0	219	74	85·0

Should such a course of reasoning as this be adopted, it might be affirmed that throat trouble is more prevalent in New England than in New York City, and the proof sought by comparing the statistics of the coast people, notoriously thus afflicted, with the Columbia College boys, or that the "tone of muscular activity" was superior in city-bred men to those of the country by putting the athletic clubs against the dwellers in a country village.

Again, Dr. Barron says: "Let the town dwellers of the same height and weight go to the Grassmere sports or the Braemar gathering, and try conclusions in wrestling or games of prowess and endurance, and the issue will not long hang in doubt." But the men that take part in these sports go in for athletics, while the general public of the city, like the general public of the country, have not the time, even if they have the inclination and opportunity, for such practice. Should, however, the same class of a city engage with those of the country, and surely this is manifestly the only fair test, there is no reason or statistics to indicate that the countrymen would prove the better. In our own country, the fact was notorious during the civil war that city men have more endurance than countrymen; they stood the long marches better, were subject to less disorders, more active and wiry, and recovered more readily from gunshot wounds.

COMPOUND FRACTURE OF THE OLECRANON, TREATED BY DISINFECTION OF THE JOINT AND MASSAGE (By Dr. Terrier).—Compound fractures were, up to a late date, considered as extremely dangerous on account of the suppuration and its various complications, and a compound fracture opening into a joint was still more dreaded, for there was superadded all the dangers of suppurative arthritis, with its consequences, pyæmia, septicæmia, etc. But since the days of antiseptis things have changed, and now, in the French hospitals, most compound fractures are treated by opening up the wound, cleaning it out and disinfecting it thoroughly.

To do the above thoroughly the following is the plan pursued:

The skin around the wound is thoroughly cleansed with soap and water, and then washed with five per cent. carbolic solution; then the cutaneous incision is greatly enlarged, all pockets being opened, and these are thoroughly disinfected with some antiseptic solution. Then the seat of fracture is exposed by separating the ends of the broken bones and thoroughly examined. All splinters and foreign bodies are removed, the seat of fracture thoroughly washed out, perfect coaptation secured, and overriding of the fragments and interposition of muscular and other tissues prevented. The wound thus made is closed by silkworm gut sutures and properly drained, and a dressing applied. Special attention must be paid to the drainage.

The above method of treatment was employed in a case of compound fracture of the olecranon, and the patient was discharged, perfectly cured, in four weeks. The case is as follows: Laborer, æt. 63 years, was admitted February 18th with the following history: In the morning the patient had been kicked in the elbow by a horse. At the moment of the accident he feels severe pain in the arm and complete incapacity to bend the elbow; moreover, there is a small, bleeding wound in the region of the elbow. Four hours later he came to the hospital. The right arm is useless, elbow much swollen, the least motion causing severe pain. At two centimetres from the head of the olecranon is a small wound, one centimetre long; at the level of the wound there is a transverse depression in which the finger can enter.

Diagnosis of compound fracture of the olecranon was made. The elbow was immediately cleansed and disinfected, the wound enlarged and the seat of fracture exposed. The fracture is transverse, and the fragments are one centimetre apart. The elbow joint has been opened by the fracture.

The wound and joint were washed out with five per cent. carbolic solution, the wound was closed by sutures and drained, an iodoform gauze dressing applied, no splint. The result was extremely satisfactory; the temperature was never above normal. Every day slight passive motion of the elbow was made. The dressing was changed on the fifth day and drainage-tube removed. The wound was completely healed on the twelfth day. Then the joint was massaged every day. On the 11th of March the patient was allowed to use his arm as much as desired. The fragments are yet some distance apart, but less than before the operation.

On the 18th of March the patient went back to work.—*Progres Medical*, April 20, 1889.

Excision of Neoplasms.—The rules laid down as to the excision of neoplasmata by Dr. Gouley are in substance as follows:

1. A suspicious neoplasm, susceptible of excision, cannot be removed too soon; and the earlier the operation, the greater the chance of prolonged immunity.

2. In the excision of malignant neoplasmata as much of the neighboring apparently healthy tissues should be sacrificed as possible.

3. Immediately after the excision of malignant neoplasmata careful search should be made for diseased lymphatic ganglia in the vicinity, and all removed.

4. Excision of multiple malignant neoplasmata is contra-indicated, particularly when many lymphatic ganglia are invaded, or when disseminated in hundreds upon the surface of the body. If, however, there be a very large growth, seriously interfering with vital functions, the excision is surely warranted as a temporary benefit to the sufferer.

5. When a malignant growth ulcerates, and this necrotic process,

and consequent putrescent discharge, becomes a source of exhaustion, the growth, if it is accessible, should be removed at once, as by this means the patient's life is rendered more tolerable, and is even prolonged many months.

6. When hæmorrhage from a malignant growth threatens life, the diseased mass, if within reach, should be extirpated without delay to prevent sudden death from a great loss of blood, though the general infection be such that there is little hope that the patient will live more than a few weeks.

7. When an ulcerated malignant growth involves a large cutaneous surface, a cutting operation being contra-indicated, applications, cataplasms, soothing lotions, deodorizers, etc., should be made to relieve the pain.

8. Whenever its locality and other circumstances are favorable to excision, the whole wound resulting from a malignant neoplasm should be cauterized as fully as possible.—*New York Med. Times.*

PILOCARPINE IN PUERPERAL ECLAMPSIA.—Fourrier was called at midnight, on November 24 last, to a woman in labor who had been seized with convulsions. He found her suffering from eclamptic attacks. She was twenty-one years of age, primapara, and at term. She had been in good health while pregnant until a month before, when her legs had become swollen, and her mental faculties had become obscured. The pains began at 7 P. M. The os uteri was dilated to the size of a six-penny piece, and the head presented, with the occiput to the right and behind. He at once bled the patient (400 grammes), but consciousness did not return. She had a third attack at 1:30, and he administered chloroform. He effected delivery at 5 A. M. with the forceps. Half an hour after the removal of the placenta the attacks recommenced, and he again bled the patient. Later on in the morning the attacks set in once more, and did not subside even under chloroform. At 2 P. M. her condition was critical; she was cyanosed and pulseless, the extremities were cold, and death appeared to be imminent. He then injected subcutaneously two centigrammes (one-third grain) of nitrate of pilocarpine. The effect was magical. Ten minutes after the injection an abundant diaphoresis set in, lasting for over half an hour. The pulse became perceptible, and no further attack occurred. A second injection was given in the evening. Her urine was then still highly laden with albumen. On the following day two more injections were made, and in the evening the patient recovered consciousness. A last injection was given the next day, and from that time the patient progressed as favorably as could be wished. A month later the albumen had altogether disappeared from the urine and recovery was complete.—*London Med. Recorder.*

PROLONGED INJECTIONS OF HOT WATER IN EPITHELIOMA OF THE NECK OF THE UTERUS.—Mendorfer, having for a long time employed prolonged injections of warm water in various uterine affections, wished to try this simple and harmless treatment in cases of epithelioma of the cervix uteri. His experience with this method has enabled him to draw the following conclusions: 1. Injections of hot water (86 degrees to 106 degrees Fahrenheit), kept up for at least half an hour, twice a day (early in the morning and about 4 P. M.), thoroughly disinfect the vagina, clean it perfectly and considerably diminish the ichorous discharge. 2. These injections lessen markedly the hæmorrhage. 3. In the majority of cases, the pains become less severe, and it is not necessary to resort to injections of morphia, the ill effects of which are well known. In many cases Mendorfer has observed the epitheliomatous masses to diminish in volume, become indurated, and their destructive process seemed to be arrested. Although such a treatment merely postpones the final catastrophe, still it is to be recommended, because it renders a painful existence easier to bear.—*Gazetta Medica de Torino.*

THE FIRST OPERATION ON THE FALLOPION TUBE.—The nationality of the first surgeon who performed ovariotomy and the place where that operation took place have often been disputed, but now it is practically settled. M. Schlesinger, of St. Petersburg, has discovered that the first case of operation on the fallopian tube was performed in 1784 at Sarepta, Astrakhan Government, Russia. The case is noted in Dr. Monprofit's *Salpingites et Ovarites.* A multiparous woman, æt. 42, was taken ill after an abortion, and a painful tumor appeared in the right iliac fossa. On February 21st, 1784, the operation was undertaken by a Dr. Seydel. An incision was made from the umbilicus to the right abdominal ring, passing over the middle of the tumor. The operator opened the peritoneum with a curved, probe-pointed bistoury. Three veins were tied; the protruding intestines were kept back by a napkin soaked in tepid milk. The tumor was attached by a pedicle to the uterus, and strongly adherent to neighboring structures. The operator carefully examined its relations, and discovered that the ovary was distinct, the tumor being clearly tubal. *Qua quidem investigatione certo et indubitato cognovi tumoris hujus sedem non ovarium fuisse sed tubam.* As it could not be removed it was laid open, washed out with a decoction of bark mixed with a solution of myrrh, and then stuffed with charpie soaked in balsam of arceus. To prevent the intestines from adhering to the parietal peritoneum, pieces of linen, soaked in oil of roses, were laid over them. The abdominal wound was dressed with linen supported by a plaster; later on sutures (*sutura cruenta*) were applied. Drainage by means of a silver tube did not answer, so the operator aspirated, by suction with his mouth, the purulent fluid which collected in the cavity of the dilated tube. This was done four times a day, and the dressings were changed on every occasion. There was fever for a week, but in a fortnight's time the discharge ceased and the wound began to close, the patient recovering completely. At the end of two years Dr. Seydel heard from his patient; she was in perfect health. The operator was decidedly before his time.—*British Medical Journal.*

A CURIOUS COMPLICATION OF PUERPERAL ECLAMPSIA; UNCONSCIOUS FOR EIGHTY-FOUR HOURS; RECOVERY (Rainsford F. Gill, M.B., M.R.C.S.).—I was called to attend a primipara, æt. 21 years, at about 10 A.M., one Sunday, labor pains having just begun. She appeared rather puffy about the face, and there was considerable pallor, but no headache was complained of, and everything appeared normal. I was obliged to leave then, but heard at 2 P.M. that she was having fits, and, on arrival in about an hour, found she was having strong convulsions at intervals of about twenty minutes. I at once gave twenty grains each of potassic bromide and chloral per rectum, and administered chloroform as soon as symptoms of a fit appeared, keeping her slightly under it in the interval. By these means the fits became less severe, and occurred at longer intervals, so that I was enabled to leave at 6 P.M. to get more drugs. The fits continued until 11 P.M., when I again resumed the chloroform, she having had another injection of bromide and chloral in the interval. The child was delivered at 12 o'clock, stillborn; and on attempting fifteen minutes later to extract the placenta, I found I was unable to do so, and on examination found the os so tightly contracted that I was unable to introduce my finger. The uterus could however, be felt externally to be quite flaccid and dilated, and on applying pressure to it blood could be squeezed through the os as from a bag. After some minutes I insinuated one finger through the contracted portion, which only reached up for about an inch and a quarter, the finger passing beyond into the cavity of the uterus, in which the placenta could be felt lying free. With difficulty a second finger was introduced and a portion of the placenta dragged through, and finally the whole of it after over half an hour's delay. The bleeding meanwhile was very free, but ceased on extraction of the placenta. All this time the patient was in a state of tonic spasm, adding greatly to the difficulties. After syringing out the vagina and administering nutritive enemata, with a further dose of chloral and bromide, I left for the night.

The patient, who had never regained consciousness after the second fit, continued in a comatose condition till 4 A.M. on the Thursday morning, when she first recognized people around her and spoke to them. From that time she became convalescent as rapidly as if the labor had been a normal one. Her temperature never rose over 100.5°, and urine was secreted abundantly after the first twenty-four hours. I was unable to expedite matters during the first stage of labor, as I did not possess Barnes' bags; the forceps could not be used on account of the tonic spasm, and I had no one to give chloroform. The point of interest here, I think, is that the spasm only affected the lower portion of the uterus, and that to a very intense degree.—*Lancet.*

TUBERCLE OF THE VAGINA AND CERVIX UTERI.—Tubercular disease of the female organs is more frequent than was formally supposed to be the case. Dr. Zweigbaum, of Warsaw, recently described in a German newspaper the case of a woman, æt. 32, and the mother of five children, all whose near relatives had died young. Fungous ulceration of the vaginal portion of the cervix occurred; it was burnt with the thermo-cautery, and healed after a course of three weeks. The ulceration recurred with profuse discharge. On exploration, a cavity, big enough to lodge a walnut, was discovered in the left posterior aspect of the vaginal wall. The edges were hard, the base ashey-grey and ladaceous in appearance. This cavity reached to the vulvar aperture. A hard, grey-based ulcer lay on the cervix. The inguinal glands were enlarged. The ulcer of the vagina increased; a portion was excised and examined under the microscope; it was found to contain hosts of bacilli. After five months of suffering the patient succumbed to rapidly advancing tubercular disease of the lungs and intestines. The local disease above described had also made great progress, invading the vulva. Dr. Zweigbaum could not prove that the tubercular lesions of the genitals were the primary condition in this case, but considered that there were good reasons for thinking so. The tubercular process had greatly advanced in the outer genitals before there were distinct signs of lung disease. The invasion of the vulva was remarkable in this case. Only two cases, according to Dr. Zweigbaum, have previously been recorded, whilst he has found twenty-nine cases of tubercle of the vagina and cervix. In nearly half of the latter there was simultaneous tubercular disease of the internal organs. In only three was there evidence that the disease was primary; in the remainder general tubercular disease existed. Dr. Zweigbaum concluded that there was no difficulty in understanding how secondary tubercular disease could attack the female organs. He traced primary disease of the same parts to direct infection either during coitus, or from the fingers of midwives and nurses who attend tuberculous patients. Infection might also occur through injections. Uterine and tubal catarrh, and, above all, chronic gonorrhœa, predisposed the patient to tubercular infection.—*British Med. Journal.*

STATISTICS OF CANCER OF THE BREAST.—Dr. Fink, of Prague, has collected the histories of 194 cases of cancer of the breast, treated in Professor Gussenbauer's wards, from 1878 to 1886, tracing after-histories to the end of September, 1888. He found that at the 41st year the frequency of cancer suddenly increased, slowly rising towards the age of 60; 128 of the cases occurred between 40 and 60, 38 between 60 and 80, and 28 between 20 and 40. Activity of the sexual functions had a marked etiological influence, especially in regard to long periods of activity of the functions of the mammary gland; 72.1 per cent. of all the cases had borne children (38 patients bearing six or more children) and 62.8 per cent. had suckled them. In 22 per cent. mild or severe inflammatory disease had attacked the affected breast; one case of mastitis carcinomatosa was noted. In only 12.7 per cent. could a clear history of injury or prolonged mechanical irritation be obtained. It is yet more interesting to find that a distinct hereditary predisposition was only substantiated in 8 out of the 194 cases. Both mammæ were affected with equal frequency. The disease was found to begin in the superior external segment of the breast in a very large majority of the cases—in 104 out of 171 which were carefully and early inspected. In 53 cases metastases were detected on an average of twenty-five months after the beginning of the disease. These metastases were generally situated in the pleura, lungs, and liver. Infection of the glands and adhesion of the cancer to the skin as a rule occurred almost at the same stage of the disease; adhesion to the subjacent muscle and ulceration both took place on an average about three months later; 153 of these cases underwent amputation of the breast, with clearing out of the axillary glands; the mortality was 3.3 per cent.; 90 of the cases died of recurrence of the cancer, but Dr. Fink states that most of the women did not apply for relief till the disease was advanced; 21.6 per cent. remained free from disease for two years, 16 per cent. for three. The patients who had undergone operation—mostly advanced cases, be it specially remembered—lived, on an average, seven months longer than those whose breasts were not removed. A critic of these valuable researches in the *Centralblatt für Gynäkologie*, No. 12, 1889, observes that Dr. Fink's statistics were taken from a series of hospital cases, where married women—perhaps for extraneous reasons—were in a great majority. Again, the relation of the patients who had and had not suckled to the proportion of women who suckled and who were not accustomed to suckle children in the surrounding country had not been taken into account.—*British Medical Journal.*

Excision of the Cæcum.—At the Surgical Congress of Bologna, Prof. Durante related a case in which he had removed the cæcum, an operation which he said had been performed only twice before, namely, by Lawson Tait and Billroth. The patient was a woman, æt. fifty-six, who for four or five years had suffered from obscure pain in the right iliac fossa when at stool. The pain increased in intensity and became paroxysmal, and the patient almost starved herself with the object of sparing herself the torture of defecation. On examination, a resisting tumor was found in the right iliac fossa, extending downward toward the upper outlet of the pelvis. It was only painful during the passage of fæces. Cancer of the cæcum of the neighboring parts was suspected, and the abdomen was opened. The tumor, which was as large as a lemon, was found adherent to the iliac fossa, the parietal peritoneum and coils of the small intestine being matted to it so firmly that the lower end of the latter, measuring twenty-five centimetres in length, together with the cæcum and a portion of the ascending colon, was removed with it. The two ends of the divided intestine were brought together by three rows of suture, namely, an interrupted one through the mucous coat, a hemstitch one through the serous and muscular coats, and a third through the serous coat. The abdominal wound was stitched up, and the patient rapidly recovered without rise of temperature. On the seventh day she had a motion of the bowels without any trouble, and on the tenth day she got up. She has continued ever since in perfect health. The tumor, which had almost completely blocked up the intestine, was found to be of tubercular nature.

Dr. Trombetta said he had published an almost exactly similar case. There was stenosis of the intestine, caused apparently by a tumor; he had, therefore, removed the cæcum with the ascending colon and a portion of the small gut, and made an artificial anus. The patient died on the fourteenth day from rupture of the intestine with fæcal extravasation. The case proved to be one of typhlitis and perityphlitis, with small abscesses.

Dr. Bassini related a case in which he had removed the cæcum with a portion of the small gut, and from eight to nine centimetres of the ascending colon from a girl æt. 22 or 23 for adenoma. Rapid recovery took place.—*The British Med. Journal*, May 4, 1889.

MEDICAL NEWS AND NOTES.

REPRODUCTION OF THE ENTIRE UNGUAL PHALANX OF THE THUMB BY A SINGLE BONE GRAFT.—Dr. Harry M. Sherman reports the following interesting case: A boy, thirteen years old, working in a tin shop, had a punch driven through the ungual phalanx of the thumb. The instrument entered at the inner side of the base of the nail by a small aperture of entrance, passed directly through the thumb and came out, by a large and lacerated aperture of exit, on the outer border of the pulp, comminuting and carrying out with it the entire phalanx, except a very small scab attached to the flexor tendon. The nail was torn away and there was much contusion of the soft parts. A wedge, containing bone and cartilage, and the line of ossification, was taken from the scapula of a healthy Newfoundland puppy and cut to the shape and size of the lost phalanx and implanted in the cavity. The result was very good. Extension of the phalanx was complete, and there was flexion of about forty-five degrees, a little lateral motion existed, but this was progressively less and the thumb could bear increasing amounts of pressure on the tip. There was also an abortive attempt at the reproduction of the nail.—*Pacific Medical Journal.*

FRACTURE OF THE THYROID AND CRICOID CARTILAGES; RECOVERY.—An interesting and rare case, reported in the *Lancet* of June 8, 1889, was recently exhibited by Dr. Sokolovski at the Warsaw Medical Society, of a woman in whom the anterior portion of the thyroid and both halves of the cricoid had been fractured through an accident with the strap of a mill. The immediate symptoms were severe pain in the throat, cough and the expectoration of a considerable quantity of blood, also marked dyspnœa. Tracheotomy (inferior) was performed the second day. During the fourth week portions of the necrosed cartilage came away. After two months both halves of the thyroid were removed with forceps, and it was found that no trace of the cricoid remained, the posterior wall of the glottis being formed by the anterior mucous coat of the œsophagus. The patient made a good recovery and was soon able to swallow food without difficulty. It is noteworthy that the condition of the larynx was accurately ascertained on the second day after the accident by means of the laryngoscope, and also that cases of fracture of the cricoid are almost invariably fatal.

CONCERNING drainage, Dr. Skene says: "I believe that I can see that those who employ drainage have the best of it." As to the use of chemical antisepsis in ovariotomy we do not for a moment believe that it is necessary, or advisable, or safe. On this point, Keith, who says of the carbolic spray, "I have expected much and have got nothing," might again have been quoted. And again: "If one be careful enough—and a few are careful enough—one may do all this with boiled water alone."

DR. DUPUY, of the Paris Society of Practical Medicine, recently read a paper before that society on the active principles of lilac. In the whole plant, but especially the unripe fleshy seeds, he has found a neutral principle which he names *syringin*, and an alkoloid called *lilacine*, which he found to possess marked efficacy as an intermittent. He also described *nasitorine*, an alkaloid discovered in garden cress.—*Chemist and Druggist.*

HYGIENIC POLICE REGULATIONS IN BERLIN.—The Berlin correspondent of the *Medical Age*, June 10, 1889, says that the city of Berlin in many respects is exemplary in its hygienic care and dispositions, especially in its regulations concerning buildings, streets, victuals, and last, but not least, the patent medicine man. No house is allowed to be built until its plans have passed not only ordinary police inspection, but also a special "hygienic committee," which rejects, of course. everything which is not in accordance with the principles of hygiene. The streets of Berlin are the objects of admiration of all foreigners, who speedily are awakened to the shameful and outrageous treatment to which they have been subjected for years. Berlin is paved almost exclusively with asphaltum and Belgian blocks, and the streets are always bright and clean-looking, regardless of weather. The inspection of victuals is so rigorous that poisoning from trichinæ, or from decomposed meat, fish, or other eatables is an exceedingly rare occurrence. Quite recently, 24,000 pounds of fish, just from Denmark, were confiscated and destroyed. No milk wagon is allowed to enter the city until the specific gravity of the milk has been ascertained. Regarding patent medicines, the Berlin police have resorted to very simple means to protect the public, viz., by the absolute interdiction of patent medicine advertisements in newspapers and other public prints. It will be seen by the foregoing that citizens of Berlin are not permitted to care for themselves, as is the hazardous privilege of Americans, but the government assumes the responsibility of all hygienic and sanitary precautions.

CASE OF SUCCESSFUL TENDON GRAFTING.—Mr. Mayo Robson gives the history of a case of severe injury to the forearm and hand, involving principally the ulnar border. The dorsum of the hand was entirely divested of muscular and tendinous structures, and the palm was extensively lacerated. Wishing to preserve the arm if possible, he took a piece of hanging tendon from the front of the hand, four inches and a half in length, and stitched it to the extensor muscles and the remaining fragment of the extensor tendon. The wound was kept aseptic and no sloughing took place. The man now had good movement, and was able to return to his work as a weaver. The hand could be pronated and supinated, and he could move the thumb and index finger. He had taken a good length of tendon and had secured it by a single suture at each end. The President elicited that the tendon had been grafted in the place of the common extensor of the index, and considered it interesting that the movement of the finger was preserved by a finger so placed. It was remarkable that the result was so good. In such a case flexion was the matter of chief consideration, and, if extension was only moderately good, it might still be sufficient.—*Clinical Society of London.*

DR. W. W. POTTER reports a case in which he had performed double ovariotomy in a pregnant woman. The patient subsequently went to full term and was delivered of a living child.

THE CZAR'S PHYSICIANS.—The health of the Czar is well looked after, if we may judge from the large staff of physicians and surgeons which is attached to the Russian court. The following comprises the list of the medical department: Three consulting physicians; ten honorary physicians; two surgeons, each of whom is paid; and three honorary surgeons; three accoucheurs, each of whom is paid; two ophthalmic surgeons; one physician for diseases of children; four practitioners for attendance upon the household, the posts of which are honorary; and lastly, one dentist.—*Medical Press and Circular.*

TAIT is much opposed to the tapping of ovarian or parovarian tumors. He says where the practice is done away with entirely, and ovariotomy is performed without the tapping, the mortality is enormously diminished.

ELECTRIC DOOR-OPENER FOR USE IN ASYLUMS.—Dr. M. J. White, Superintendent of the Milwaukee Hospital for the Insane, has invented an apparatus by means of which the doors of a building may be unlocked, opened and kept open, simply by closing an electric current by pressing on a button in the superintendent's room. This is certainly a humane invention, and the apparatus should be placed in every insane asylum that is not built absolutely fire proof. In asylums the freedom of the inmates must depend absolutely upon the superintendent or his assistants; no fire escapes to be utilized by the efforts of the patients are admissible, and the horrors that have been recorded of the burning of these unfortunate prisoners in their prisons attest the futility of depending upon attendants to unlock each door separately. As a therapeutic measure, too, it is of value. The attention of the profession has been recently specially directed to the importance of treating the insane in a manner that admits of as much freedom as is combatible with safety, and especially to relieve them of all causes of alarm. Many of them are perfectly sane on all subjects but one, and it would certainly be a relief to their minds to know that they would be free to escape from the building in case of fire.

TREATMENT OF TETANUS BY ABSOLUTE REST.—Prof. E. de Rienzi, recommends absolute rest for the treatment of tetanus. Since the year 1882, when he applied the treatment for the first time, he has treated six cases of tetanus with the result of obtaining five cures. The following is a brief *resumé* of the indications which the author gives for the treatment:

1. The patient having the ears stuffed with cotton or wax is to be kept in a quiet room and in total darkness.
2. The sick room, as well as the adjoining ones, is to be thickly carpeted in order to avoid the noise of footsteps.
3. The room is to be opened for ventilation every four hours with the greatest care. The diet is to consist of liquids, milk, eggs beaten in broth, water and wine, etc.
4. All light necessary shall carefully be covered from the sight of the sick.
5. If constipation exists, both purgatives and injection are interdicted. Above all, quiet is necessary.
6. Should the pains be intense, with the object of quieting, powdered belladonna and ergot of rye should be used.—*Bulletin Gen. de Therapeutique.*

SIR WILLIAM JENNER has advised the Queen to give up champagne and claret for the present, and to drink whisky and Apollinaris water.

PARALDEHYDE HABIT.—A case of addiction to this comparatively new narcotic is related by Dr. Hughes in the *Alienist and Neurologist.* A maiden lady was induced by her physician to give up the use of morphine and chloral, but she acquired in their stead the habit of consuming paraldehyde, to the amount of an ounce or more daily. She cannot sleep unless under its influence, and when deprived of it for a few hours she is languid, restless, depressed, and suffering physical pain. Treatment which included the withdrawal of the drug was not agreeable to the patient, and the doctor was compelled to leave her to her fate.

THE Emperor of Austria has conferred on Pasteur the order of the Crown of Iron, which gives him the right to the title of Baron and the insignia of nobility.

AT a recent meeting of the Chirurgical Society, of Paris, Lucas Championniere presented a patient whose patella he had sutured two months previously. The fragments, which were widely separated, were approximated with silver wire sutures, and these were not afterward removed. The after-treatment consisted in rest and elevation, the limb not being immobilized. Perfect recovery resulted—the patient walking easily on the limb at the end of six weeks after the operation.

A NEW ALIMENT.—Dr. Dujardin-Beaumetz recently exhibited at the Academy of Medicine a new alimentary substance, "fromentine," which is obtained from wheat by the aid of special mill-stones. Fromentine is the embryo of the wheat reduced to flour. It contains three times more nitrogenous substance than meat, and a strong proportion of sugar. Hence it would appear that it might advantageously replace powdered meat as a concentrated food.

SUCCESSFUL REMOVAL OF A CEREBRAL TUMOR.—Prof. Pean recently reported to the Paris Academy of Medicine (*Buffalo Med. and Surg. Jour,*) a case of Jackson's epilepsy, the cause of which was diagnosticated as a tumor in the motor zone. The spot selected for trephining was that corresponding to the upper extremity of the fissure of Rolando, near the median line. The trephine was applied and the membranes found normal. When the pia mater was opened a large yellowish tumor was found adherent to it. This was removed and the wound dressed antiseptically. In ten days the healing was complete and in two weeks the epileptic seizures disappeared entirely. At the time of report (two and a-half months from operation) there had been no manifestation of epilepsy for two months.

THE ELECTRICAL TREATMENT OF SEWAGE.—It is reported (*Med. Press and Circular*) that the experiments in the electrical deodorization of the London Sewage, which was carried out recently under the superintendence of the inventor, were highly promising.

It is stated that the cost of dealing in this manner with one million gallons of sewage would only amount to thirteen shillings. This low figure, of course, would be a very strong point in favor of the scheme, especially when it is remembered how vast has been the outlay sanctioned for the chemical treatment of sewage.

Enough has been shown to establish the practicability and utility of the electrical treatment of sewage, and we may earnestly hope that the difficult problem of effectually disinfecting will not now be far off from being solved.

Electricity is becoming daily more and more an indispensable commodity to modern civilization, but if by its means we are enabled to purify sewage, it will have decided one of the most urgent questions in connection with the growth and development of cities.

BACTERIOLOGY NOT OF GERMAN BUT OF FRENCH ORIGIN.—Our friend, Dr. Pelletan, the venerable but ever combative editor of the *Journal de Micrographie*, neatly turns the tables on certain parties who have written to him complaining of "too much bacteriology" in his journal, and by inuendo, at least, refer to it as more befitting the Germans. "Bacteriology or microbiology," says he, "is not of German, but of French origin. It was M. Pasteur who first comprehended the significance and importance of these new studies, and he first formulated the processes and pointed out the directions which others have but followed," which is quite true. Pasteur was many years in advance of the balance of European investigators in this direction. This should not, however, detract from the honors of Koch, Ehrlich and others of the German schools who, following long after, nevertheless blazed out new paths and virtually made a new science of the study of micro-organisms.—*St. Louis Med. Journal.*

TURPENTINE IN POST-PARTUM HÆMORRHAGE.—"For some years," writes a correspondent, "I have used spirits of turpentine in post-partum hæmorrhage, and, in every case, with the best results. When the ordinary means *i. e.*, friction over the uterus, irritation of the uterus by introduction of the fingers, cold, hypodermic injection of ergotine, etc., failed, by saturating a piece of lint with the turpentine, and introducing it in my hand into the uterus and holding it against the walls, rapid contraction took place, and all hæmorrhage instantly ceased. In one or two cases, when the patient was almost pulseless, it seemed to act as a stimulant. On no occasion did its action fail, nor did it cause the slightest inconvenience, except in one, when the side of the patient's thigh was slightly blistered by some that came in contact with it, but it gave very little annoyance. I consider it to be much quicker and safer in its action than any other remedy; it does not cause any injurious result, and, besides, it is much more easily applied. In country practice, getting hot water or using injections often entails loss of valuable time."—*Lancet.*

EDITORIALS.

ELIXIR VITAE ET FOUS JUVENTULIS—Perhaps the entire medical profession have read the accounts of the experiments of Dr. Brown-Séquard on himself by injecting subcutaneously a decoction or extract obtained from the mashed testicles of dogs. We have refrained from comment on this subject until the present time because we hoped that the matter would die out like other sensational rose-colored medical romances that have in the past been served up as a sapid ragout to tickle the palates of the public mind. We yielded primarily to the immediate conviction that a great mind was commencing to wear badly, and that its life's last scenes were being closed by the paradoxes of senility. But we are confronted by the statements that the eminent savant has repeated his experiments on himself and others and that his first results have been repeated and emphasized. He states that subcutaneous injection of the macerated testicles of dogs produced in himself the nervous and vital energy of thirty years of age. That his muscular system was innervated, his mind cleared, and hinted that the sexual functions were stimulated with the tonicity of youth. The Society of Biology, before which his paper was read, received the statements with great reluctance, and suggested vitiation in the experiments as a possible cause of the rejuvenation or perhaps mental suggestion. Dr. Brown-Séquard holds to his opinions, however, with a tenacity that *may* be accounted for by the stimulation which he has evidently received from whatever source it may be.

America is rarely behind hand in anything, and in proof thereof in this matter we have read that a distinguished neurologist has repeated in part the experiments of Brown-Séquard on himself and patients. This neurologist used the bruised testicles of sheep (rams presumably). At the present writing he states remarkable results as to general innervation. The paralyzed arm of an old gentleman was moved with great vigor soon after a subcutaneous injection.

Let us not deceive ourselves in this matter. The animal world is before us and there are plenty of lusty young who may be sacrificed, and plenty of superannuated roués who may be rejuvenated if there be any *virtue* (which is doubtful) in the *succus testiculorum.* The eminent French savant was content to use rabbits and guinea pigs, but our experimenter has shown his preference for lambs, "which you know is an animal good to eat."

This probably is an unnecessary refinement, seeing that sound testicles are sound testicles all the world over.

The French mind, with its marvelous adaptability to circumstances and a pioneering spirit which has characterized it since science had its birth, has suggested that women with nervous exhaustion and neurasthenia be injected with the juice from beaten ovaries. The French mind has run away with itself. Let conservatism prevail and the male organ remain as from time immemorial, the elixir of life and the fountain of youth for both sexes. If there be any stimulating property in the juice of bruised testicles, it probably lies in some ptomaïne. To suggest that the stimulation is the result of the mechanical action of spermatozoa is carrying suggestion to cobweb fineness. A question of considerable clinical interest is attached to this matter. Our contemporaries, the *Medical Press*, the *London Hospital Gazette*, and the *Medical Record*, state that the idea is not original with Brown Séquard—that Horace tells of Canidia, a witch at Rome, preparing a love philtre by mashing the testicles of fiery horses in a mortar. A careful search of the odes, epodes and satires of Horace has failed to discover such a reference.

Frequent references are made by Horace to the witch Canidia in the odes, epodes and satires, but the only excuse for the above idea that we can find is exhibited in the epode V., in which Canidia with three other witches procures a gentle bred boy, and stripping him naked, bury him up to his chin, having set before him, out of his reach, food, so that he might die with longing and his *liver* form with a few other ingredients (no mention of testicles), a love philtre where withal to conjure one *Varus*, an old sinner. Amongst the ingredients of the philtre were the eggs of a toad smeared with blood, a feather from a screech-owl. "*Et ossa ab ore rapta jejunæ canis*," (which being translated) "*and bones snatched from the mouth of a dried-up bitch.*"

It would be interesting to know where in Horace reference is made to the testicles of wild horses being beaten in a mortar.

We admit that this seems equally as important as the corroboration of the experimentals of Dr. Brown-Séquard.

MORPHINE PRESCRIBED FOR QUININE.—We have recently read in the lay papers that the death of a child was caused in Montreal by a physician unintentionally prescribing morphine *bisulphate* instead of quinine bisulphate. The mother administered one powder to her child; it grew worse; she administered another; it died; she failed to connect the death of the child in any way with the administration of the powders. She gave another powder to another child with the result that it grew rapidly comatose. Her suspicions being aroused, she called in the attending physician, and stated her newly-acquired fears to him. He ridiculed the idea, called for the powders, tasted one, said they were correct, and immediately caused another powder to be administered with the death of the second child as a result. In order to calm the mind of the mother he sent for the prescription and to his horror found that he had written for the *bisulphate of morphine!* Crimination and re-crimination on the part of the druggist followed. The druggist reading the prescription, and knowing that there is no such salt as the *bisul*phate of morphine, put up instead the sulphate of morphine. The druggist holds himself excusable. The doctor claims that the druggist is to blame, since he failed to put up what was prescribed. Both are beyond a doubt at fault. The druggist should, of course, have communicated with the physician, since it was a case of doubt. He had no sort of right to suppose the physician meant sulphate of morphine It was natural, it is true, for him to think so, but as there was an element of doubt in the matter, it was his duty to have consulted with the physician.

There is no doubt the latter made his error through inadvertence born, perhaps, of the brain-weariness of over-work--a source of error with which we are all acquainted; but when he lays the entire fault on the druggist, he takes a cowardly advantage of a pure technicality, and seeks to hide his error by attributing to officiousness a fault which was quite natural and which was in all probability the desire to save trouble for the doctor and time for the patient. This mistake is one of many such that have occurred in practice—have wrecked families and horrified the public.

The most perfect *entente cordiale* should exist between doctor and druggist. We are all fallible, and the doctor's errors should be pointed out to the druggist, and *vice versa.* Especially in the prescribing of morphine should the druggist look to the size of the dose, and in case of doubt consult the doctor. The doctor's mistakes can often be remedied by an intelligent druggist; the reverse is by no means so frequently true. Advice on this subject has been given *ad nauseam*, but it is only by repetition that truths become implanted in the minds of men, and it is only by repetition that caution will ever be aroused.

THE friends of the late Dr. Jas. L. Cabell, of the University of Virginia, and the Medical world everywhere, have lost by his death a man who was an honor and a benefactor to the age in which he so nobly and usefully lived. His loss will be widely mourned, but the memory of his pure spirit and lofty aims will continue to mould the characters of men so long as his memory remains in the hearts of American physicians.

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ORIGINAL ARTICLES.

ARTICLE I.

THE DRAINAGE SYSTEM PECULIAR TO NEW ORLEANS. ITS DEMONSTRATED POSSIBILITIES, AND ITS BEARING, WHEN PROPERLY ENFORCED, UPON THE GENERAL HEALTH OF THE CITY, UNDER A MOST CRUCIAL TEST.

By C. H. TEBAULT, M.D.

From the "Report on Drainage to the City Council of New Orleans, by Maj. B. M. Harrod, City Surveyor, November 22, 1888," I am indebted for the following :

"The removal of the entire surface drainage of a city by pumping is very exceptional, there being no other instance in this country in which it is necessary. Hence, but few observations on this subject have been made or recorded. The importance of a careful study in this case is, therefore, apparent. The following table is submitted, for the time, based on the assumption that rainfalls of six inches are of sufficient frequency to make it necessary to provide for the removal, within twenty-four hours of such part as is not retained by cisterns, absorbed by the soil, or consumed by vegetation.

"Assuming the mean or average lift from the interior canals to the level of the lake as three feet, there would be required for the removal of this volume of storm drainage an aggregate of six hundred and seventy-four horse power. This would be divided between the different districts as follows: 1st District, 116 horse power; 2d District, 285 horse power; 3d District, 166 horse power; 4th District, 107 horse power. This power could be concentrated to advantage in one pumping station for each district, except the second, where, owing to the large volume and area, it would be advantageously divided."

It is of vital importance to the inhabitants of Southern cities to weigh well all the facts relating to the origin, causes, and means of prevention of yellow fever. Only through the accumulation of a large number of well observed and undoubted facts can we reach a correct knowledge of the laws which govern yellow fever and all other diseases. Those who are instrumental in the discovery and establishment of the laws which concern the origin and spread of so great a scourge as yellow fever should certainly be considered as honored and useful instruments in the hands of Providence.

The author of the observations immediately to follow is well remembered for his devoted and untiring efforts in the cause of sanitary science, and his recognized ability gives a high character to his testimony upon this or any other subject of hygienic experience, and is, therefore, in every way entitled to the confidence and respectful consideration of the medical profession.

The personal inquiries of Dr. Elisha Harris, with respect to the hygienic history of New Orleans during the late war between the States, were made during the month of July, 1865, while pursuing certain investigations relating to the hygienic experience of the military forces. We shall limit the present review to a bare statement in the language of the author, of those facts which are of the greatest interest in their bearing upon the sanitary regulations carried out in New Orleans, and the results growing out of their rigid enforcement. Be-

TABLE OF THE PROPORTION OF SIX INCHES OF RAINFALL TO BE PUMPED FROM EACH DRAINAGE DISTRICT IN TWENTY-FOUR HOURS.

Drainage Districts.	Total Area. Acres.	Total Volume of 6-inch Rainfall. Cubic feet.	Area of Improved Lands. Acres.	Area of Unimproved Lands. Acres.	Proportion of Drainage from Improved Lands. Per cent.	Proportion of Drainage from Unimproved Lands. Per cent.	Volume of Drainage from Improved Lands. Cubic feet.	Volume of Drainage from Unimproved Lands. Cubic Feet.	Total Volume of Drainage. Cubic Feet.
First District, between New and Old Canals..	2,218	48,308,040	1,530	688	.75	.30	24,992,550	4,495,392	29,487,942
Second District, above New Canal..........	8,650	188,397,000	4,630	4,020	.50	.25	50,420,700	21,888,900	72,309,600
Third District, from Old Canal, to Lafayette Avenue..	4,612	100,449,360	1,820	2,792	.60	.30	23,783,760	18,242,928	42,026,688
Fourth District, below Lafayette Avenue....	3,724	81,108,720	1,247	2,477	.50	.25	13,579,830	13,487,265	27,067,095
Entire City.........	19,204	418,263,120	9,227	9,977	.56	.27	112,776,840	58,114,485	170,891,325

fore proceeding to quote from this valuable contribution, let me add that shortly after the occupation of New Orleans by the United States' forces, the most stringent sanitary requirements were promulgated, and an efficient sanitary police established.

Following is from Dr. Elisha Harris's report:

" Throughout the entire period, upwards of two years, the Provost-Marshal, the Military Governor, the Mayor (an appointee of the provisional government), together with the Medical Director of the post, and certain subordinate health officers, have vigilantly administered the regulations relating to municipal hygiene and cleanliness in New Orleans and its vicinity. During all that period the accustomed scourgings of yellow fever have been suspended in that city, while the dire forebodings and prophecies of the inevitable pestilence that would quickly destroy the Northern soldiery on reaching the Gulf coast, remain unrealized. The conditions under which the Crescent City has obtained this remarkable immunity from a doom which her own bitter experience seemed to fasten upon her, are now as well understood as were the apparently inexorable causes of her former insalubrity.

" Such immunity from her accustomed scourgings of yellow fever had not been enjoyed by New Orleans the last half century. Even her wisest hygienists had been generally discredited and often derided when they publicly taught, as Fenner, Barton, Simonds, and Bennett Dowler had most faithfully, that the active and localizing causes of yellow fever and the high death-rate in that city were preventable. There was a truthfulness worthy of the medical profession in the words of Dr. Barton, who, as President of the New Orleans Sanitary Commission, sitting in grave and scientific consultation upon the terrible visitations of yellow fever, unhesitatingly declared the causes of that pestilence and the city's excessive insalubrity '*entirely susceptible of cure.*' But how few persons appreciated the truth of Dr. Barton's words of prophecy when he said that 'upon the broad foundation of sanitary measures we can erect a monument of public health, and that if a beacon light be erected on its top, and kept alive by proper attention, this city will be second to none in this first of earthly blessings.'

" It is the design of the following notes to show what have constituted the chief causes of insalubrity in New Orleans, and by what means the redemption from its fearful doom has been achieved. In doing this it will be shown that for two successive years the threatening pestilence was localized in a fleet of gunboats, moored so close to the city's levees that they menaced the streets with death. It will likewise appear that by the exercise of absolute and relentless military authority, an impregnable system of quarantine was maintained, restraining all the exotic causes of yellow fever, and controlling such causes at a distance of nearly seventy miles from the city; and yet that this dreaded scourge originated spontaneously in more than twenty of the gunboats that were moored in the river, opposite the city; also that those naval vessels were uniformly filthy, ill-ventilated, and overcrowded; that of the more active, cleanly, and less crowded steamboats (120 in number) employed in quartermaster's service, no yellow fever occurred; that in all the city not more than three or four cases of yellow fever occurred each year, and that the cause of such immunity from the pestilence of former years was as certainly the direct result of *civic cleanliness* and the hygienic care of the poor, as its accustomed visitations were the result of neglect of these public duties.

"Three classes of facts, concerning which neither doubt nor uncertainty can be alleged, have conspired to give precise relations and definite value to the series of events we are about to consider:

"First.—The relentless rigor and precision of a military government precluded the ordinary violations of quarantine regulations, while it gave peculiar certainty to the execution of sanitary regulations in the city.

"Second.—The official usages and the armed discipline of the naval fleet in the harbor of New Orleans and upon the river, enabled the medical officers to trace to its source every case of yellow fever that occurred in the gunboats.

"Third.—That the climate of the city and of the river districts, during the past three years was not perceptibly different from the climate of previous years and the periods of yellow fever epidemics; the same evils from imperfect culture and drainage, imperfect levees, and extensive crevasses, flooding and subsequent evaporation from vast areas of overflowed land, continued to recur in the latter as in the former years. In short, all the physical conditions that are supposed to promote the prevalence of yellow fever—excepting only such as are immediately controllable by a sanitary police—prevailed continually and abundantly in the delta of the Mississippi during this period of immunity from that dread disease.

"*The Sanitary History of New Orleans before the War.*—Constantly recurring epidemics of pestilential diseases had, for two generations seemed to pronounce the doom of the 'Crescent City,' and notwithstanding the vast interests of commerce, there have been dismal forebodings of inevitable decadence of wealth and commerce.

Between the years 1829 and 1852 inclusive, there were not less than *twelve* great epidemics of yellow fever, or one every second year. Those twelve epidemics killed 22,884 inhabitants, or an average of 1907 in each epidemic, which gives an average of 888 persons killed by that fever, year by year. As the fever prevailed to some extent almost every year, the actual average each year reached about 1,000 persons.

"During the epidemic years the average death-rate, from all causes, was nearly 75 deaths to the 1000 inhabitants. The average annual death-rate during all that period, and up to the year 1861, was about *six and a-half per cent.* There were years when the death- rate exceeded *ten per cent.*

"Fresh immigration of Northern or foreign born persons was always accredited as the chief source of any excessive mortality; and to become *creolized* (naturalized to the climate) was esteemed almost equivalent to a limited life *assurance* policy. But we have now seen that during the period of military occupation by the national troops, a hundred thousand Northern men, uncreolized and unacclimated, have annually arrived in or passed through that city without a single individual being smitten with yellow fever, except in a few instances in which soldiers *detailed* to assist at the boats on the levee in receiving and conveying yellow fever patients to the Naval Hospital on New Levee and Erato streets.

"The Summers of 1862, 1863, 1864, and 1865 have now passed without any sign of epidemic disease, except from paludal malaria being manifested at New Orleans, save only the outbreak of small-pox last Winter. That epidemic was at once controlled by a house-to-house visitation by a corps of medical inspectors, armed with vaccine virus.

"Malarial fever and the ordinary diseases of the climate, not dependent upon a medical police, continued to prevail, but the diarrhœal and infantile maladies were less fatal than in former years. The following statistics of mortality for the six weeks that are usually the most unhealthful of the year show how the 'hygienic barometer' stood during the Summers of 1863 and 1865—the periods when the largest numbers of Northern men and unacclimatized persons were in that city. For the Summer of 1863 the records stand thus:

		No. of Deaths.
During the week ending	August 2	169
" " "	" 9	176
" " "	" 16	166
" " "	" 23	139
" " "	" 30	161
" " "	September 6	145
" " "	" 13	203

During the seven weeks of the past Summer (1865), of which we have received official returns, the records read as follows: *

		No. of Deaths.
During the week ending	July 2	155
" " "	" 9	154
" " "	" 16	155
" " "	" 22	165
" " "	" 30	174
" " "	August 6	144
" " "	" 13	168
" " "	" 22	170
" " "	" 27	141
" " "	September 5	149
" " "	" 10	116

New York cannot boast a lower death-rate for the same period. The total number of deaths in July was 793, and in August, just past, the number was but 623. Compare this with the mortality in that city in August, 1853, when 6,201 of the inhabitants died. Or compare with the average mortality of the three years, 1853, 1854 and 1855, which gave more than 1,000 deaths per month, though the population was far less than during the past Summer. It cannot be claimed that there were any favoring circumstances in the seasons, the dryness or the humidity,—that can account for such hygienic changes. During the past three years the levees have been cut and *crevassed*, and the country overflowed as at no former period; and then, in August last, for example, the swampy surfaces surrounding the city were desiccated, *less than a single inch* of rain having fallen that month; while in the early part of the present month (September), as in the months of Spring and Summer, floods have descended. Now, from the sanitary officers of the city, we learn that diseases and mortality have been chiefly diminished in connection with the abatement of those local conditions that are recognized as the *localizing causes.* These causes, in the language of Dr. E. H. Barton, consisted mainly in—

---

* The total population, including the permanent or the transient military forces, was little less than 200,000.

" ' 1. Bad air.

" ' 2. Offensive privies, cemeteries, various manufactories, stables, slaughter-houses, filthy streets, etc.

" ' 3. Bad water, stagnant water, bad drainage.'

" These were the causes of disease first noticed and officially controlled by the military government under the national forces.

" *The Appliances and Means of Sanitary Reform.*—1. The streets, the courts, the market-places, and all the private and public premises of the city, have been cleansed and kept in a state of unusual cleanliness by an absolute authority.

" 2. The drainage of the city was a matter of constant official concern, and the steam-drainage works kept in great activity night and day. (As all the drainage is superficial, by gutters, ditches and canals, the mechanical appliances for drainage located at the junctions of canals and bayous leading towards Pontchartrain maintain an important relation to civic purity and the public health. *Some of the water-lifting machines exhaust from the canals and basins at the rate of more than* 100,000 *cubic feet per minute, raising the sewage from the lowest levels of the town, and sending it forward toward Lake Pontchartrain by way of the bayous.*) During the frequent rain-falls, when the water floods the gutters and covers whole streets, cleaners are seen at work with hoes and stiff brooms, adding the effectiveness of their arms to the process of cleaning by water-flushing.

" 3. The water supply, which is wholly from the river, was, from the beginning of the military government, a matter of first-rate importance. Though the river surface is higher than the plane of the city, the supply depends mainly upon steam-pumps and reservoirs. The pumps were ordered to be kept in the highest activity, and the water company was held accountable for any failure in its works.

" 4. Street cleaning was literally a *cleansing.* The faithful broom was immediately and all night long, as constantly as night returned, succeeded by a flushing stream of water from the hydrants, filling and flushing gutters and the pavement joints, and, aided by the sleepless sweepers, thus rendering the Augean work complete. *So clean a city had never before been seen upon the continent.*

" 5. Scavenging and domiciliary hygiene were enforced by order of the Provost-Marshal. Privies and garbage, stables and butcheries, damp and unventilated quarters, and the haunts of vice and debauchery, were all brought under police control. The privies in populous streets, and those connected with places of public resort, were sometimes cleaned as frequently as twice each week. All animals for the markets were impounded at the outskirts of the city, and the cattle boats were there scrubbed and cleansed before proceeding down to the commercial levees. And as an illustration of the salutary exercise of authority over improper habitations, the writer would mention that he saw all the tenements upon the first floor of an entire block vacated by peremptory orders in a single day.

"6. The destitute were supplied with wholesome food at the expense of the city.

"Such were the leading features of the sanitary government of the Crescent City under military rule. The errors of that government, and the criticisms it may have provoked, were neither the cause nor consequence of the protection it gave to life and health. *All the acts that related directly to the public health can be repeated in any city, and by any enlightened civil government.*

"*Quarantine.*—Perhaps there has never been a more enlightened and faithful exercise of regulations in the nature of quarantine than has been witnessed at New Orleans the past four years. Yellow fever and small-pox were the only infections feared or guarded against. All the exotic and transportable causes or *fomites* of these maladies were detained at the quarantine anchorage, sixty-five miles down the river, near Fort Philip.

"Shall we be told that it was by this very application of a judicious and inviolable quarantine that the city escaped the epidemic visitations of disease? We have seen that small-pox appeared as a widespread epidemic, and that it was checked by a house-to-house visitation of a medical police armed with vaccine virus.

"*Yellow Fever.*—This disease did not become epidemic in the city. Nearly three and a-half years have passed without so many as a score of sporadic cases occurring in the streets, where that enemy and pest of the city had been wont to destroy its thousand victims every year, and sometimes to kill no less than *five thousand* in a single month!

"As the writer's views concerning the *transportability* and the infectious nature of yellow fever are already well known to the Academy, the following statement regarding yellow fever and quarantine at New Orleans, will not require explanation as respects the standpoint from which he has examined the facts. With the peculiar and abundant experience of yellow fever in the ports of the North fresh in mind, the history of this malady at New Orleans and in our naval fleet on the

Mississippi, was investigated with all the predilections which such experience could justly impart in favor of the theory of the exotic and imported origin of the disease.

"Well-marked and fatal cases of yellow fever occurred in New Orleans in the Autumn of 1863, and in the Autumn of 1864. In the former year the Charity Hospital received two cases, both of which proved fatal. Both were boathands from the steamer J. H. Hancock, a river tug. In 1864 there were five undoubted and fatal cases of yellow fever, terminating in black vomit. The writer conversed with the physicians who attended the patients, viz.: Professor Crawcour, Dr. Bennett Dowler, and Dr. Smythe; and Dr. Huard has furnished notes of a case that occurred in the parish prison. These five cases occurred in persons who resided or daily visited in the vicinity of Erato, Tchoupitoulas, and New Levee streets. They were exposed to known causes of the fever. Other cases may have occurred; if so, they have eluded all search.

"We have referred to the two cases from a tug in the river in the Autumn of 1863. *Nearly* 100 *other cases of the fever occurred in the river fleet and in the Naval Hospital that season.* The history of all these cases, in detail, shows that they were not of imported origin. They nearly all occurred in crowded, filthy, and unventilated gunboats that were at anchor in the river at New Orleans. Owing to the inaccessibility of medical officers who had charge of some of the patients, the tabulated history of these cases gives way, in this place, to the more complete records of yellow fever in the Autumn of 1864.

"We have mentioned the five cases of black vomit that occurred near New Levee street in 1864. The Naval Hospital occupies a large pile of old buildings on that street, with yards and accessory buildings towards Erato and Tchoupitoulas streets. One block of buildings—store houses—intervenes between the hospital and the river levee and landings. The accompanying record of yellow fever in that hospital and in the idle gunboats in the stream, sufficiently accounts for the concentration of infection in the particular locality in which the five cases occurred outside of the hospital premises. Other cases occurred, but they were directly dependent on intercourse with the infected vessels, and the bedding brought from those vessels.

"The fact, then, is indisputable, that yellow fever visited twenty-five vessels in the fleet that was anchored in the river in front of New Orleans during the summer of 1864, and that the disease appeared first, viz.: as early as September 12th in vessels that had been for a long time at anchor there. The brief notes here appended supply the best commentary we could wish. Filthiness, crowding, excessive heat and moisture, lack of ventilation, and the stagnation incident to anchorage in a tideless stream, constitute the leading facts relating to the infected vessels.

"To test the merit of this view of the *spontaneous origin* of the fever, the writer has obtained the written history of every case of which any note was made at the Naval Hospital and elsewhere. He also obtained from the quartermaster in charge of water transportation a record of the 120 steamers and sailing vessels that were under his control. *Of these active vessels only one had yellow fever on board.* That these ordinary mercantile and transport vessels under control of the quartermaster were open, ventilated and moving briskly about from place to place, yet infinitely more exposed to all sources of exotic infection, is the only comment this point in our record requires. Our records show that not less than 191 cases of yellow fever occurred on board the twenty-five vessels we have mentioned in the fleet at New Orleans in the year 1864; and that of these fifty-seven proved fatal. Also, that in addition to these there were twelve cases and three deaths among employees and guard at the Naval Hospital and landing on Erato Street. *Five other cases of black vomit* occurred in citizens exposed to the same cause in the vicinity of the landing.

"The total number of cases was 208, and the total deaths 65. At the quarantine station no other cases or vessels than those mentioned in our record were seen in 1864; and from July 4, 1863, to September 10, 1865, only twenty-three deaths from yellow fever occurred, and only one vessel, besides those we have here designated, brought cases of the fever to the quarantine station—that, a Spanish warship, in 1863.

"The hygienic lessons taught by the events to which these notes refer, abundantly vindicate the principles and the methods of sanitary improvement which are advocated by the medical profession. These lessons may be entitled as follows:

"1. The insalubrious circumstances that produce a constantly high death-rate, and the localizing causes of disease generally, are the most important and the most preventable causes of the epidemics that afflict cities.

"2. *That the climate and the topographical disadvantages which have hitherto been popularly supposed to be the essential causes of the insalubrity of New Orleans, are but unimportant factors of insalubrity, which sink into insignificance when the preventable causes of disease in* *the city are controlled, and that 'vanquished Nature yields its empire to man who creates a climate for himself.'*

"3. That yellow fever, the most dreaded scourge of New Orleans, *was unequivocally generated in a large number of filthy and unventilated gunboats and other naval vessels lying idly at anchor within a mile from the densest portions of the city.*

"4. That by fomites, or some other material agency, the infection of yellow fever was communicated to the guard, and to certain other persons who were exposed in a narrow district, at the Naval Hospital landing in Erato Street, and near New Levee and Tchoupitoulas streets.

"5. That the infected vessels were remarkably close in their exterior construction; that they discharged no cargoes; were under an armed surveillance and discipline; and were seemingly incapable, from the circumstances, of diffusing their own infection, except by the clothing and 'dunnage' of the sick when taken ashore.

"6. That vessels and river-boats of ordinary construction and in active service, escaped yellow fever almost without exception.

"7. That no vessel infected with yellow fever, arriving by way of the Gulf of Mexico, was allowed to pass above the quarantine station 65 miles from the city.

"8. That the utility of a rational quarantine system against the fomites of yellow fever was not disproved, but the contrary, rather, by the records studied by the writer at New Orleans.

"9. That an epidemic of small-pox was promptly arrested by house-to-house vaccination.

"10. That with the prevention of epidemics, and unquestionably by the same agencies of prevention generally, the death-rate from zymotic diseases as a class has been very greatly diminished."

The length of this article is greater than I could have wished, and I trust it will not prove burdensome to either your pages or to your intelligent subscribers. The subject discussed is of vast and growing importance. It should be stated that this sanitary work under the military occupation of this city was not performed by the large forces on duty here—it was done by non-military employees of the city government and paid for out of the city treasury. It is proper, however, to say that the city government was conducted through military appointments, control or direction. The most rigid sanitary regulations during the four years of military control began and ended in the simple and strict enforcement of the privy and drainage systems of our city. Nothing new was practiced or even suggested—not an addition was deemed necessary to be added thereto. Our two peculiar systems just above mentioned were found capable of meeting the most exacting requirements and the very highest duty in the interest of, possibly, the most scrupulous and inflexible sanitary discipline that was ever invoked on the top of the earth, and the constant spur of apprehended danger never relaxed, thus evidencing results never before attained, much less equalled, in any known large community. Indeed it is well averred, "so clean a city had never before been seen upon the continent."

The following represents the total amounts expended under the military occupation of this city during the late war between the States in thoroughly carrying out her drainage system, in thoroughly draining and cleaning her streets, and in the performance of all other works relating to the most exacting and absolute sanitation:

	Drainage.	*Paving.*	*Streets.*
1862	$93,185.00	$43,405.96	$270,567.11
1863	33,871.84	none	352,599.75
1864	39,247.33	none	334,971.21
1865	65,481.03	none	396,550.77

Had this system not fulfilled all the vital necessities of the then most urgent and pressing military requirements of an invading army completely unacclimated, it would have been improved, where improvement were possible, under this absolute authority, or in some manner modified. The occupation of this city was a matter of crucial importance, and the very fact that no fault was ever found with its sanitary system, its drainage, etc., pleads eloquently from this source in the splendid and continuous good health of this large army of invasion for the maintenance of our unsurpassed system if rightly administered, and its careful and intelligent perfection to keep pace with our enlarging and growing requirements.

Our open ditches and open canals flushed with our exceedingly pure (from an anylitical standpoint) Mississippi River water, and exposed as they are to the constant influence of one or the other of Nature's three greatest and perfect disinfectants, to wit: the general atmosphere, the sunshine, and our heavy rainfalls, it is impossible for noxious and poisonous gases from this source to attack our people, as is too often the case in sewered cities. The ensuing from a high authority is pertinent: "The exhalations from the lungs and skin of a single human body vitiate or spoil for breathing ten cubic feet of air per minute, or about 90,000 gallons per day. This foul air, together with that formed from innumerable other sources of contamination, is perfectly removed by diffusion (an unfailing chemical law) and the atmosphere is thus preserved respirable and pure."

The drainage canals were in a bad condition when the city was occupied by the military, hence the larger expenditure in 1862. In a future contribution, if this meet with a favorable reception, we may have more to say on this subject. We might, with pardonable pride, close with the inquiry, where may we look to find a system equal to our own?

ARTICLE II.

THE VALUE OF LAXATIVES IN SMALL DOSES.*

BY Q. C. SMITH, M.D., Austin, Texas.

To speak, even briefly, of the various causes that produce constipation, or conditions and processes that tend to retard or cripple the normal secretive, excretive and peristaltic action of the bowels, would require more time and labor than we could spare to the preparation of this article, which, for want of time, must be brief. For a moment's reflection upon this great branch of clinical medicine will forcibly impress the idea that to treat of it as a comprehensive whole, would require much more time, labor and ability than is vouchsafed to us. Therefore, we only venture to remind you of the importance of a few well known facts in regard to one branch or division of our subject, *the value of laxatives in small doses.*

For that the majority of physicians of the present time fail to fully appreciate the curative value that attaches to a judicious use of properly selected laxative medicines, we have no doubt. But, just here at the outset, allow us to define our terms and position, by claiming that there is properly a marked distinction between a *purgative* and a *laxative* medicine. We define a purgative as a medicine causing the alvine evacuations to be more frequent, if long continued, than would be beneficial to health; while the effects of a properly selected and administered laxative, when its use is indicated, if long continued, is highly promotive of the best degree of physical well being.

That the surpassing value of laxatives in the treatment of disease was highly esteemed even in the early ages of the healing art, the writings of Hippocrates and many of his most skilful successors abundantly attest. But those wise old medical philosophers who drew their inspiration from well digested clinical observations, rather than from theoretical hypotheses, so favorite in our times, failed not to warn us of the great danger incurred by the indiscriminate use of purgatives. And the great Hoffmann—whose anodyne soothes the pangs of our day—seeing the gross abuse made of purgatives by the laity of his time, went so far as to publish a monograph advising that purgatives be rejected from the materia medica. But the wiser, if not more learned Hufeland, at a later day reasoned more philosophically when he said: "The method of treating disease by purifying the intestinal canal and the abdominal system has been a fundamental method of practice by the most successful physicians from the earliest times. This method has lived and vindicated its own value, through all the vicissitudes of ages and theories, and demonstrated beyond a doubt that the intestinal canal is, in the great majority of cases, the battle-field where the issue of the most important disorders must be decided."

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* Read before the Travis County Medical Society, August 1, 1889.

This great, broad, sweeping aphorism need not surprise us, if we will only for a moment consider that all diseased actions originate in disturbed or perverted nutrition. And that it is the great function of the mucous surface of the intestinal canal, especially its upper part, to largely aid in performing the primary work of preparing and furnishing nutritive material for all the tissues and parts of the body, and to eliminate from the blood, by and through the peculiar power of its secreto-excretive glands, especially of the lower or fæcal producing part of the intestinal tube, those residual matters of the assimilative processes and effete products of tissue change. For it is readily apparent that any serious derangement of either of these two great indispensable functions must, in a short time, affect the health of the individual, most disastrously. Therefore, it requires no labored argument or elaborate reasoning to substantiate the assertion made or position assumed by the great promoter of longevity.

As you know, medicinal substances are divided into four great classes; of these classes the eliminantia are the most important. And in the great majority of cases where this class of medicines are indicated, a laxative action is the most valuable service they can perform. In the use of laxatives we should first endeavor, by the use of small doses to avoid perturbative action and unpleasant results. Then we should consider the nature and peculiar features and the cause or causes thereof of the case before us, and select the remedy best adapted to cover the disordered condition. This selection should not be mere haphazard guess. For, as the great Hufeland has well said, herein lies the true poetry of clinical medicine; to be capable of selecting the remedy best suited to relieve or correct any particular disorder of the system.

But in the long list of ailments that may be best remedied by a judicious use of laxatives, there is one morbid condition—an underlying pathological substrata, common, in greater or less degree, to each and all cases. That is, a clogging up, as it were, of the organs, processes and avenues of elimination of the residual matters resulting from disordered nutrition and effete waste products of tissue change. For the fæcal matters composing the alvine evacuations are not merely composed, even in health, of the crude, insoluble, or non-digestible parts of food ingested, but are, to a large extent, composed of effete detritus, the results of tissue change, which are eliminated from the blood by the peculiar elective catalytic functional power of the intestinal glands, especially those of the lower bowel. And just here the conservative power of nature is sometimes most remarkably displayed; when the lower bowel more or less gradually becomes packed with fæcal matter, nature seeks for means to relieve the portentous condition. Old hepaticus is first called upon, but by this time he is so stupified by his own stagnated and vitiated secretions that he does not hear or heed the call. Something must be done.

Now, while the secretions elaborated by the glands of the mucous membrane of the large bowel do not directly aid in digestion, as do the juices of the small intestine, yet the lymphatics, under certain conditions of emergency, convey more or less of these vitiated secretions of the lower bowel into the general circulation. And the large bowel being in a state of constipation, contains decomposing fæcal matters, from which are evolved leuco-ptomanic poisons which are absorbed therefrom into the blood, and to every part of the system, producing their characteristic disordering effects. The most prominent of which cause a more or less free pouring out of irritant serous fluid from the inner coat of the bowel, and cartharsis is produced, and thus is nature enabled, in some cases, to relieve herself by flushing out, even with dirty water, the clogged, foul sewer; and thus, with more or less constitutional disturbance a greater or less degree of health is restored and more calamitous results averted. But who would wish to repeat this dernier resort of nature, or trust to this mode of relieving a perilous condition that could and should be so much safer and better relieved; or, still better, prevented by a proper use of laxatives.

Another class of cases of constipation are those in which the eliminative and antiseptic functions of the glands of the lower bowel have long been crippled or impeded, and as a vicarious result the patient emits with his cutaneous excretions and exhalations a decided fæcal odor; he is using his befouled cesspool for a cistern, and advertises his dirty habits and polluted condition by the disgusting odor of his breath and body. This latter loathsome condition would doubtless occur much more frequently were it not for another wonderful conservative provision of nature, in that the glands of the mucous membrane of the rectum secrete a tenacious transparent mucus that serves a two-fold purpose: being powerfully antiseptic it prevents putrid fermentation of the fæcal mass, and also lubricates and protects the parts and facilitates defecation.

Both the forms of stercoremia we have just mentioned may be prevented and oftentimes cured by a timely judicious use of properly selected laxatives. And when we consider that there is a sufficient quantity of those peculiar alkaloidal poisons, called leucomaines and ptomaines generated in the intestinal canal of even a healthy man in one day to cause his death, if they were all re-absorbed into his blood, it is a wonder that grave injury is not oftener sustained from this source. And this fact, if no other were available, would be sufficient to make prominent the transcendent importance of the rôle played by laxatives in the therapeutic drama. And when we consider the virulence and activity of these leuco-ptomanic poisons we need not wonder that the victim of disordered digestion is often so profoundly affected, or that he should imagine that he suffered the tortures of the damned. But with these brief and imperfect generalities we hasten to speak a few words in reference to specific conditions and remedies.

First, allow us to remind you of the extensive and profound influence which the sympathetic nervous system exercises over secretion and excretion; and this traumaturgic force or power, is specially manifest in the phenomena attending the vegetative functions of vital activity. And in no part of the human body are these phenomena more strikingly manifest than in the functions of the alimentary canal. Here, in the epigastric region, is the great solar plexus, the cerebrum abdominale, the inferior ganglia of which, exercises special control over the secretion of the intestinal canal. Then is it any wonder that warm soothing anodyne applications over this region, should relieve the torturing spasms of colic, or allay the tormina and restrain the fitful activity of a dysenteric diarrhœa? But to return: The peculiar modus operandi of each medicinal substance, or even classes of substances, that may be used as laxatives, has not yet been fully explained. And as the nervous arrangements for regulating intestinal movement and secretion are exceedingly complex, and until our knowledge of their physiological relations are more perfect, we cannot expect to understand completely the effect that drugs produce upon them. Therefore, we must now, as did the ancient fathers, rely, to a large extent, upon impirical clinical observations as to the effect of laxative remedies, rather than trust to theoretical deductions, however carefully calculated. For in the same sense that the so-called scientific *anatomical* surgeon is often an unsafe operator, so must the dogmatic therapeutic theorist, however learned, ever be a dangerous physician. Neither will the beautiful laboratory experiments of even the profoundly learned chemist, avail us here; for the tissues and organs we have to deal with have, each a suigeneris and autonomous law of action by which the phenomena of their several functions are made manifest. Nevertheless, this apparently insuperable difficulty, a necessary concomitant of our ignorance, should not discourage us, but rather stimulate us to greater effort; as our legs are short we should step more quickly.

Drugs may have a laxative effect upon the intestine by their direct action upon the central nervous system, or by their indirect or secondary action through the alterations in the quality or supply of the blood which circulates in the intestine itself. And when we consider the apparently contrasting conditions that influence the quantity of blood or degree of nervous force, that is supplied to, or manifested in the intestine, well may we pause, for at least a moment's reflection, when called upon to write a prescription for a laxative medicine. For when we see even a half drop of tinct. opii. given once in twenty-four hours, act efficiently as a laxative, and a whole drop of the same medicine for the same patient, is an overdose, and so fails to act as a laxative; and the half drop of tinct. opii. acting more effectually as a laxative than any quantity of any of the ordinary so-called purgative or laxative medicines, then indeed the problem assumes enormous if not discouraging proportions. But we, like the patient man of old, must set ourselves to study out the *causes* of those curious things and apparently contradictory phenomena.

When we observe that it is an anæmic weak nervous female, with an irritable painful ovary, who may often be pleasantly relieved of her prolonged obstinate constipation by taking only a half drop of tinct. opii. every night, and that a full minim, of the same drug, is an overdose, and fails to act as a laxative, then indeed, may we open our eyes to the momentous fact that something more than mere machine routinism is necessary for even an intelligent use of laxatives—that class of medicines that even the most ignorant of the laity deem themselves capable of prescribing. For many of our most useful laxatives are found among the neurotics. And what is more strange, is that even neurotic medicines that are therapeutically so unlike as to be antidotal to each other, as opium and belladonna are both, in certain conditions, efficient laxatives. However, we would not recommend opium as a laxative, even in the class of cases just referred to, because of its well known deleterious secondary effects upon digestion, assimilation and depuration. But in its stead would prefer some of the solanacea, as belladonna or hyoscyamus; with which might well be combined—for many cases in small portion, ext. ipecæ and assafœtida.

Again we have another very important, probably the most frequently applicable, class of laxatives, in what are termed vegetable alteratives. To this class belong such medicines as stillingia, ipecac, colchicum, taraxacum, phytolacea, sanguinaria, guiacum, leptandrin, as well as burdock, golden seal, etc. This class of medicines, when administered in small doses, seem to have a peculiar affinity for the adenoid tissues, hence, seem to hunt out, as it were, the glands, both large and small, and by their steady, prolonged, gentle, energizing power, upon these powerful emunctories and metamorphosing apparatus, materially aid the vismedicatrix naturæ in cleansing the tissues of the body of mischievous impurities, by producing and maintaining a gentle, steady, laxative action, upon the bowels. This invaluable class of medicines—vegetable alteratives—are too much neglected by regular practitioners; one result of which is to aid nostrum venders to grow rich by their sale. To get the full value of them, they must be given in small doses, and for a long period of time—say several weeks, or months. By the prolonged use of small doses of certain vegetable alteratives, selected to suit each case, they not only act as valuable laxatives, but, by their steady, gentle, depurent action, aiding in the removal of effete waste products from the tissues of the body, rid the system of their hampering, paralyzing influence, and also increase the physiological demand for, and ability to use, newer and better building up material, thus becoming valuable tonics. And a disregard of this important therapeutical fact, often renders the use of valuable hematic restorative tonics, as the ferruginous preparations, not only nugatory, but actually injurious; the depurative organs and processes being clogged and impeded almost entirely, are utterly unable to perform the additional work brought to their crowded doors, and therefore, the would-be iron tonic becomes injurious instead of beneficial.

This unskilful use of tonics, is frequently seen demonstrated in the treatment of weak, anæmic, nervous women; many of these have called upon us, telling us that *they* could not take *iron*, as the eminent, aristocratic Dr. Stubbs, had tried all sorts of iron-tonics, and "they just could not take them, as such tonics bound up their bowels, made their heads ache, and really made them nervous." Pardon the digression, but this not unfrequent, and so instructive occurrence, so forcibly demonstrates the invaluable service that properly selected and judiciously administered laxatives can be made to render, that we could not refrain from mentioning it. A somewhat parallel condition not unfrequently occurs, in the routine use of the hypophosphites in the treatment of phthisis pulmonalis; this valuable remedy, being given alone, too long, its long continued impeding effect upon the depurative functions of the glands, causes it to become a poison instead of a remedy.

Laxatives, by their depurative power, may be made to serve an invaluable purpose, as preventive of those slowly progressive organic diseases of the liver, lungs and kidneys that extinguish so many valuable lives. And if judiciously selected and properly administered laxatives may often be made to serve both as tonics and neurotics, not only as preparatives but in many cases superceding the necessity for the use of neurotics and tonics entirely. But the beneficial effect of properly selected and administered laxatives is nowhere in all the wide domain of therapeutics more satisfactorily demonstrated than in the treatment of pulmonary diseases, and especially those of a more or less chronic character.

In the earlier stages of that most widely fatal disease, pulmonary consumption, laxatives are our sheet anchor, for by a judicious, persistent, prolonged use of them we may often hold our phthisically inclined patients from drifting out of the harbor of hopeful conditions into the hopeless maelstrom of inevitable decline, from which there is no escape. And in the treatment of phthisis pulmonalis, by the use of any or all the vaunted specific remedies, or any combination of them, we will most surely come to grief if we neglect the judicious use of laxatives. For whether we give our consumptives cod liver oil, hypophosphites, arsenic, creosote, balsams, or send them beyond the seas to balmy isles, or to the highest mountains, where microbes dare not climb, or to breathe medicated vapors, or to gallop over the pine forest hills, camp out, and eat broiled vension and mountain trout of their own capture and cooking, with ashcakes and fresh cream; we say with all these specifics and favoring conditions that may environ our consumptive patients, if the beautiful and indispensable machinery of the great metamorphosing and assimilating apparatus, the chylopoetic system, is not kept unimpeded and properly lubricated by a judicious, persistent use of laxatives, we will, in the great majority of cases, lose our consumptive patients, regardless of the time or the stage of their condition when we are first called to treat them.

Just here, permit us to incidentally remark that we regard phthisis pulmonalis as quite a curable disease in a large proportion of cases if proper treatment be promptly instituted and persistently and intelligently followed out, upon the earliest discoverable manifestations of the disease. And notwithstanding the boasted advances in objective diagnosis of recent times, our treatment of a large proportion of diseases must, at least for the present, remain sympathetic; for whether we recognize the true pathology of the disease or not, we cannot fail to recognize that the patient's main distress reveals itself in his symptoms. And there are few cases of disease, the symptoms of which, during sometime of their progress, do not require the use of laxatives, and not only so, but the judicious, timely use of laxatives will not only prevent more grave conditions, but obviate the need of other and more disturbing remedies. As before intimated, the vegetable alteratives and a few of the vegatable purgatives are the class of medicines from which the majority of many of our best laxatives are drawn. And at least two or three of these should be combined; for if these combinations are judiciously made, the combined remedy is less irritating, more steady and durable in its action, and produce better results than could be obtained from the products of any one plant.

The doses of laxatives, to do their best work, should be *very small*, much smaller than our standard therapeutic works would indicate, and given for long periods of time. And in the use of laxatives we should always make haste very slowly, and the composition of the remedy should be changed every one or two weeks. These changes should always be made by a new prescription from the physician, who, of course, should carefully note anew the past and present condition of the patient, the effects of the previous prescription, and the indications to be met in the future.

Laxatives should be given three times a day, just after meals, and in such doses as will not disturb the comfort of the patient. When given just after meals they are digested and pass with the nutrient food products into the long portal circulation, and thus in a properly prepared condition, reach all the tissues of the body ready prepared to serve their peculiar catalytic purpose. Gubler thinks they pass into the circulation as albuminates. However this may be, we know from clinical observations and from experiments, that medicines taken into an empty stomach produce more disturbance, and are more transient in their effects and are hurried out of the system mainly through the kidneys, usually producing a very different effect to that which the same medicine in same amount given to same patient just after a full meal. As a brief illustration a few grains of antipyrin given hypodermically acts as an analgesic, while if given by the mouth it is a powerful antipyretic. Curare given hypodermically so affects the nerve centers as to kill by paralysis; but if given by the mouth death is attended with more or less strong convulsions. And even the venom of the crotalus horridus may be taken via the stomach without any perceptible disturbance to the system, while we are all aware of the extreme virulence of this poison when it is injected directly into the circulation.

Although want of time will not permit us to speak of the many various laxative medicines, either vegetable or mineral, yet the importance and wide application of usefulness of *sulphur* constrains us to give it at least a passing notice. As you know, it is a very ancient remedy, and one in which the public has long had great faith, and uses on frequent occasions. That it should be a valuable medicine when properly administered we would presume, when we remember that it is one of the important normal elements which enters into the the composition of the tissues, and fluids, and secretions of the body. Therefore, being a basic alimentary substance, and so nearly related and intimately associated in physiological chemistry and the assimilative processes with such important and active substances as oxygen, phosphorus, iron, and manganese we can readily see that by proper preparation and administration it might become a most important remedy for many diseased conditions. And so we find in practice that it is. But we are now permitted to speak of it only as a laxative, for which most useful purpose it is wonderfully well adapted. And as it is necessary that laxatives should be taken regularly for long periods of time, and as it is difficult to induce patients to persevere in the prolonged use of inconvenient or unpleasant remedies, we have taken a hint from Professor Garrod, and requested Messrs. John Wyeth and brother to prepare a compound sulphur lozenge, (samples of which we here show you), which are stable in composition, pleasant to the taste, convenient to take, and we believe superior in therapeutic action to the plain sulphur. We have suggested that in future there be added to the present formula, (which is on every package of the lozenges), a small portion of some suitable lime-salt—perhaps the bisulphite of lime—believing that this addition will increase the solubility and usefulness of the remedy. Besides, the addition of arseneous acid and bisulphite of lime will tend to prevent sulphurous eructations, which are liable to occur in some cases, while these basic substances are also valuable stomachic remedies themselves.

You are all familiar with the great value of sulphur as a remedy for relieving hepatic derangements, pulmonary and cutaneous diseases, the various forms of rheumatism, and as a prophylactic to taking cold during unusual exposure, or to prevent the contraction of contagious diseases; these are folk-lore therapeutic ideas, the remote origin of which cannot be traced, but which later scientific investigations have abundantly substantiated. As a laxative, two or three of these lozenges may be taken two or three times a day for a long period of time, if the prolonged use of a laxative be required, as they do not so soon lose their good effect, and require to be so often changed as do most of *vegetable* laxatives. It is best to take them soon after meals, soon followed by a glass of water, drank slowly by sips.

We will not detain you to speak in detail of the contrasting effects of large and small doses of laxatives or other medicines, but will speak briefly, in a general way. Laxative medicines given in very small doses, especially with or soon after meals, increase cell action and aid metamorphoses, while comparatively large doses of laxative or other medicines, especially if given upon an empty stomach, retard, prevent, or destroy the activity of this form of transformative force. And small doses, if given regularly for a long period of time, are more durable in their beneficial effects than large doses.

Finally, in conclusion, we would say that we have by no means gone over the whole range of the useful action of laxatives, for the orbit of their legitimate function is so extensive in the therapeutic realm as to necessarily connect their province of action with all other remedies of the materia medica at some stage of almost every dirorder we are called to treat. And we may be assured that he who fully masters this wide-reaching therapeutic problem, however humble his station, or modest his pretensions, he will thereby be enabled to fill with profitable matter at least a small space upon one of the blank pages of the great Boerhaave's unwritten volume.

617 Colorado Street.

ARTICLE III.

CONCENTRATED LACTIC ACID AS AN ESCHAROTIC.*

By WM. B. EAGER, M.D., Middletown, Orange Co., N. Y.

My attention was first called to concentrated lactic acid as an escharotic, in an article by Dr. J. P. Knoche, of St. Louis, Mo., published in the *Journal of Cutaneous and Genito-Urinary Diseases* for April, 1887, and such observations as I have made refer solely to its use in this capacity. It differs in its action from the actual cautery, caustic potash, or its combination with lime, the zinc chloride, or the mineral acids, in that it does not excite inflammation in the adjacent healthy tissue, in this respect resembling more the arsenical paste. It does *not* act as rapidly as the caustics above named, but *does* act quite efficiently. I have applied the undiluted acid upon a thin layer of absorbent cotton to the healthy epidermis for several hours without producing excoriation. Unless applied to healthy, denuded tissue, its action is almost painless; applied to a healthy surface, void of epithelium, it causes quite sharp smarting for about one minute, then it soon disappears. My experience in its use is limited to epithelioma, lupus exedens, encephaloid cancer, tinea versicolor, and what, for want of a better name, I shall call tylosis.

The case of *tinea versicolor* was on a female of Irish parentage, twenty-six years of age, otherwise in perfect health. It first attracted her attention about three years before presenting herself at my office in April of the present year. It was located principally upon the chest, left side, from waist to clavicle, extending posteriorly as low as point of scapula. Anteriorly upon right side were several patches, a few extending upward upon the neck, showing above her dress. To the affected surface I applied the acid, diluted with three parts of water, using a firm pad of absorbent cotton, and firmly chafing the denser patches, directing her to rub the surface with a dry towel upon retiring. As she resided in a neighboring town, I furnished her some of the mixture, directing her to have it applied every third day. I saw this patient twice afterwards at intervals of one week; at her last visit no sign of the eruption remained. The sensation produced by the application she compared to a mustard plaster "when it first begins to warm up," but disappearing in a few minutes.

In the first week of August, 1887, Mr. W. M——, a farmer, about fifty-five years of age, residing some twelve miles distant, came to my office to get relief from "something growing" upon his left foot, upon which he wore an arctic over-shoe, being unable to wear his ordinary shoe or boot. Examination disclosed the outside of the foot, from the toes, to, and partly around the heel, and extending upon the dorsum from one to two inches in width, to be covered with a hard, not horny, mass of varying thickness, irregularly roughened upon its surface, of a yellowish earth-dust color, and at three points tongues of the growth (?) extending a short distance upon the plantar surface. It was thickest at outer edge, becoming thinner as it spread out upon the dorsal surface. In the outer thick portion were a number of cracks extending through the mass, showing it to be fully one-eighth of an inch in thickness at points. The back of the thumb, first and second fingers of his left hand, were covered with the same growth (?), if that is the proper term. In other respects his health was good. It gave him no pain unless he wore his ordinary shoe or boot, but complained of an almost constant itching and burning in the foot; none in the hand. He first noticed it about fifteen months before he came to me, and had endeavored to get relief by use of foot-baths, washes and ointments, some selected by himself, others prescribed by his physician. I was unable to detach the mass at any point with a knife-blade, and only a small amount of mealy-looking dust could be scraped off. My diagnosis was tylosis, although lacking in some features of true tylosis, and from its location lacking the usual cause, friction and pressure. The development upon his hand was to me a new feature. I decided to treat it with the acid. The mass was thoroughly rubbed with the undiluted acid, using a stiff cotton probe for the purpose, covering the parts afterwards with benzoated oxide of zinc ointment, directing him to scrape off all that could be removed when he reached home, and repeat the process daily until well. I next saw this gentleman at a public gathering the last Wednesday of the same month, wearing his "Sunday boots" as comfortably as he ever had done. He informed me he was relieved by eight or ten applications, and without pain. Just two years to a day after first visit—in August, 1889—this patient, at my request, called to show his foot and hand. I could find no evidence of the disease remaining. Twice within three months after his first relief, at a few points upon his foot, and once upon the thumb, the epithelial growth showed signs of returning. A couple of applications—to again quote the patient—"of that stuff cooked its goose," since which time he has remained well.

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* Read at the Seventh Special Meeting of the Fifth District Branch of the New York State Medical Association, held in Port Jervis, Aug. 27, 1889.

A few months later, another case upon a lady forty-eight years of age presented itself, in which the outer edge and dorsum of both feet were involved, but less in extent of surface and thickness of the mass. The plantar and palmer surfaces, in both cases, were unaffected, with the exception already noted. This last case was complicated by an eczema. The undiluted acid removed the thickened layers of epithelium in about one week of daily applications. The eczema gave me considerably more trouble. August 24, 1889, this lady came to me for some of the acid, as for the past two or three weeks she had noticed a few spots which looked just like the original when it first appeared. Date of first treatment, February, 1888.

The case of *lupus exedens* was a maiden lady; Irish by birth; æt. about 66 years. It first appeared about thirteen years before she came to me, at which time it involved the right side of her nose from spine to junction with the cheek, extending upward, half way to a line transverse from the inner canthus of the eye, irregular in outline, with most of the border of the nasal opening destroyed, leaving lower margin of the cartilage exposed. Three previous attempts at a cure having failed, she came, at the urgent solicitation of her brother, without hope.

In April, 1888, I began the use of the undiluted acid, (as she positively refused every surgical proceedure), rubbing it over the surface of the marginal nodules and denuded surface, and with the stiff part of a broken, steel uterine cotton-probe, firmly wrapped with a thin layer of absorbent cotton, dipped in the acid, bored into the nodules whenever possible, as well as under the edges of the surrounding skin. I covered the surface with benzoated oxide of zinc ointment, and once in three or four days, with a knife-blade peeled off the scales formed. After a few applications the patient assumed the treatment, and I visited her once only in two or three weeks. The treatment has only recently been discontinued, with the entire surface healed, covered with smooth skin, no puckering of the edges, and the destroyed portion of the tip partially restored. I began the treatment as an experiment, and am pleased with the result. From the experience gained I am convinced the duration of treatment may be greatly shortened.

I used the acid in one case of epithelioma of the lower lip. Patient is a female; born in Ireland; æt. about 65 years. This case I had attacked previously with Vienna paste, but without success, except in causing an ugly burn, extending much further than I wished or intended. Later I used the paquelin cautery, following which, the sore healed, over about four-fifths of its surface, when the process was arrested, and in a short time the newly formed covering began to break down. I then touched the part with the acid every second or third day, with the result that in about five weeks it was completely healed. This is now nearly two years ago. About two months since her daughter informed me that it remained sound.

Another case of epithelioma, of the perforating variety, situated upon the anterior and outer aspect of the left thigh, just above the knee, was treated, at my suggestion, with the acid, by one of my professional neighbors, in the early summer of 1888, successfully. The time required for treatment I cannot state accurately; some two months, I believe.

This patient I examined within the past two weeks, the cicatrix showing no sign of a return of the disease.

With your indulgence I will relate, as briefly as I may, one more case in which I have used the acid. Early in April, 1888, I was consulted by Miss B——, æt. 52 years, who, in August, 1886, first noticed a lump in the left breast, about the size of the end of her thumb. The growth, at first, was slow, but later some stinging pain in the tumor caused her to consult her physician, under whose care she remained until his death in February, 1888. During the spring of 1887 its growth was quite rapid, producing tension, with discoloration of the skin over it. About September or October, (1887) ulceration began, followed, as it progressed, by frequent hemorrhages, with loss of strength, appetite, and weight. I found an ulcer two and a-quarter inches vertical by two and a-half inches transverse measurement with irregular, ragged outline, surrounded by a border one-half to three-quarters of an inch wide, raised about half an inch above the surrounding surface, covered by dark-purple unbroken skin; the nipple with a narrow, irregular margin of purple-colored skin remaining near its centre; odor of discharge very offensive.

My diagnosis was a firm, ulcerating encephaloid cancer. She positively refused amputation, and finding both albumen and casts in her urine, I declined to advise it. She was in utter despair, having visited one of my neighbors who correctly informed her of her condition, and holding out no hope but the knife, she came, hoping I could disprove his judgment. When I proposed to at least try to hold the disease in check she readily assented. I stated frankly that what I proposed to do was an experiment, which I had never tried and knew no one who had. In my own mind I hoped to control the hæmorrhage, and watch the effects of the acid upon the mass of diseased tissue. I applied it undiluted, with a cotton probe into the depressions of the surface, and under the ragged edges of the skin, then with thin saturated pads of absorbent cotton covering the ulcerated surface and elevated border, over upon the healthy skin. These pads I directed her to remove in two hours and dress with sub-iodide of bismuth. This I repeated twice a week, at each sitting with forceps and scissors removing such portions as the acid had disorganized. In this way the whole mass was removed down to and exposing the muscle, except about one inch and a-half about the centre of the lower raised border, and this portion was reduced to about half its original size. The nipple was gradually undermined and came away in a mass about the size of the first joint of my little finger in about three months. During the latter months of treatment, tongues of newly formed skin were projected from the edges, but they were short lived. The offensive odor and bleeding ceased from the beginning of the treatment; her appetite and strength improved, and from June to November she gained six pounds in weight. She professed to absolute freedom from pain until the muscle beneath, and the edges of the ulcer denuded of the diseased tissue were reached. Although the saturated pads were in contact with the healthy skin surrounding the sore from two to four hours after each dressing, no vesication was produced, the healthy epithelial cells seeming to resist the action of the acid up to that point of time. Internally I had given bichloride of mercury in minute doses (96 of a grain), three times a day, in combination, or alternating with tr. ferri chloridii, one part and spts. nitre dulcis three parts, with the purpose of retarding the progress of her renal disease. From about the first of December the dressings were made once in four to six days, the patient always coming to my office up to February 22, 1889, when she came for the last time. On the 5th she was seized with uræmic convulsions, remaining unconscious for three days, then partially recovered her mental faculties. She died on the 23d.

In presenting the above cases, my object has been to show what the acid *has* done as I have used it. I do not anticipate it will induce the surgeon to discard his scalpel and sharp curette, nor yet the potent and more active paquelin and galvano-cautery; but may it not have a mission in the early stage of those epithelial diseases, for which later on the curette and scalpel are called into use, the dread and horror of which, in many instances, causes dangerous, if not fatal, delay, or prevents treatment altogether.

To the dermatologist I believe it will prove a cleanly, easily-managed, and valuable addition to his list of remedial agents, especially so in diseases due to vegetable fungus and deranged conditions of the epithelial layers of the body non-malignant in character.

ARTICLE IV.

THE TREATMENT OF TYPHOID FEVER, WITH SPECIAL REFERENCE TO THE COLD WATER METHOD.*

By J. H. HUNT, M.D.

In the treatment of typhoid fever, a disease so perilous to human life, the method which secures the greatest comfort to the patient and offers to him the surest promise of recovery, ought to engage our most earnest consideration.

Although the latest medical text-books advocate the cold bath method in treating this disease, and able papers endorsing the plan have recently been written, yet I am convinced that but few practitioners in this country have adopted the method systematically.

It is regarded by most physicians as troublesome and inconvenient. There is a feeling among medical men that for the successful application of this method unusual watchfulness is required, and they are slow to assume the responsibility of what they term radical measures, from the fear that the slightest misinterpretation of symptoms or the least deviation from a correct application of the method would result in disaster. At the same time, there exists among the laity a wide-spread prejudice against the application of cold water in this way. It is true, the less troublesome expectant and symptomatic methods, reinforced by the recently developed antithermics, offer to the physician systems that are both easy of application and unobjectionable to friends. But a superior treatment, unquestionably, lies in the proper use of the cold water bath. With this conviction the purpose of this brief paper is to present some of the clinical experience of the last fifteen years of my practice in the management of typhoid fever, contrasting the result reached from the expectant and symptomatic management with that of the methodical use of cold water, as advocated by the Germans. In my early practice, the picture was frequently presented of a strong, robust person who, under the influence of the poison of the disease, became apathetic, then delirious, with involuntary discharges, until finally the patient was placed in a most dangerous condition of adynamia. The disease was in progress uninfluenced by effective method of treatment, and if, happily, recovery ensued, the expectations of physician and friends were fulfilled; but if a fatal result occurred, expectancy ceased.

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* Read at the Seventh Special Meeting of the Fifth District Branch of the N. Y. State Medical Association, held in Port Jervis, on Aug. 27, 1889.

During the first three years of professional life, there occurred in my practice 16 cases, treated by the method then in vogue, and with a mortality of 18.75%. When Leibermeister's emphatic statements, the result of Brand's, Jergensen's, and his own observations, were published, I felt obliged to adopt them in preference to a plan of treatment which involved so much uncertainty and so many risks. Since 1878, sixty cases in my practice have been treated by the cold bath method throughout, and the records of these cases show the most gratifying results, the rate of mortality being but 5%. In this second series of cases there should be included 18 additional cases, making a total of 78. I did not treat these 18 additional cases by the systematic cold bath method, as they were of such a nature that I considered baths by immersion at that time either unnecessary, inconvenient, or impracticable. In my early practice, those especially weak, and thus unable to bear the cold baths, were simply sponged. Of these cases the mortality was 22.22%. The third series comprised 35 cases, occurring as an epidemic from milk contamination. They were simultaneously affected, and could not be treated by cold baths. The disease affected all ages, from the young to the old, pregnant women, and those suffering with chronic disease. Of this series the death rate was 17.14%. Of the later cases, occurring during the past two years, and not included in the second series, there were 12 with 3 deaths, or a mortality of 25%. These later cases were treated by sponging and the so-called antipyretics. Thus, out of a total number of 76 cases treated by the expectant or symptomatic method, the records show 16 deaths or a mortality of 21.05%, while in those cases treated by the German method of cold baths the death rate was only 5%. It may be stated here that *while* early in the adoption of the treatment by immersion, selections for such treatment were made from those who seemed strong and robust, the general rule of treating all cases by baths unless positively contra-indicated, *was soon* followed, and I am inclined to believe the death rate of the 60 cases was not materially changed. The experience derived from treatment of the above cases is by no means large, but I am convinced of the vast superiority of the cold bath method over any other. I am satisfied that the treatment should be commenced at the earliest possible moment, and in all cases, unless absolutely contra-indicated. As soon as the disease manifests itself the patient should use and become accustomed to the baths, even before the actual necessity for them exists. Many cases of the fever will commence with a moderately high temperature, from which it may be premised that the attack will be a severe one. But this does not necessarily follow, as I have known attacks which presented at the beginning symptoms of great severity, to prove exceedingly slight. It is true also that attacks of the most severe and protracted nature might result from those which at the beginning promised to be mild.

In the application of the cold water method, a portable bath tub is used; the ordinary copper tub, boxed in as it comes to the dealer, answers every purpose. Handles may be attached to both ends to facilitate its handling. This is placed at the bedside, half filled with water of a temperature varying from 65° F. to 95° F. The patient should be placed in the water, and if its temperature exceeds 65° F., cold water is added until it is chilled, taking care to pour the water into the tub slowly, without splashing it upon the body. After remaining in the water for from eight to fifteen minutes (the earlier baths may be of short duration), or until chilliness is complained of, the patient is lifted out by two attendants and placed on the side of the bed, which has been protected by a folded blanket. Then he is hastily dried, and after wrapping a warmed blanket about the feet, he is left undisturbed for the period of two hours, at the expiration of which time, if indicated, another bath is given. During the interval between the baths let the patient lie in bed, entirely nude, and freed from the exertion of putting on and off his customary garments. The temperature in the axilla should be recorded every two hours before and after the bath, taking care to thoroughly dry the axilla with a hot towel, in order to secure accurate registration of the temperature. When the temperature in the axilla reaches 102½, the bath may be repeated. Any intelligent person can be taught the use of the thermometer, and during the course of the disease this instrument should guide the physician as to whether a greater or less time in the tub is required, and as to the necessary temperature of the water. There are, however, considerations other than the body heat to be regarded in determining the frequency and necessity of the baths. I have been impressed with the fact, often observed in my practice, that in some cases of typhoid fever great constitutional disturbance and the most serious complications would attend cases characterized by a low temperature. Even then, if the temperature does not reach the usually prescribed point at which reduction is to be effected, should the patient be apathetic, or show other symptoms of disturbance of the sensorium, the cold baths should be given at intervals of two hours. It is not necessary, nor is it desirable, to reduce the temperature to normal. For those first seen at the end of the first or during the second week I have used the graduated baths of Ziemssen until the patient could be accustomed to cold bathing. While the most beneficial results are immediately obtained in these late cases, the blunted sensations and apathy are not relieved until shock is produced by cold water. Some alarm is at first felt at the pallor of countenance when the patient is removed from the tub. Decided shivering occurs at the end of the bath and also after the patient is returned to bed; but he falls into a refreshing sleep, and the fears of friends are soon quieted. I have seen patients for the first time at the end of the second week's illness, and who, because of stupor, were unable to realize they were in a bath tub, answer questions intelligently after the second bath and remain in full possession of their mental faculties thereafter. Whether the dangerous nervous symptoms in typhoid fever depend on prolonged high temperature or on the typhoid poison, certain it is, by the methodical use of cold water baths the functions of the brain remain undisturbed. Moreover, bronchial inflammation is lessened, pulmonary stasis is prevented, the kidneys excrete naturally, and in my experience, complications are much less likely to occur. The effect of this treatment is in marked contrast to the expectant or symptomatic methods. If the method as recommended by the Germans is thoroughly applied, a patient may be conducted throughout a severe attack of the fever without one moment of mental aberration. There are no involuntary discharges, no bed sores, as a rule, and the satisfaction of preserving the mental faculties during the attack well repays the physician for the increased trouble. The contra-indications are few and well outlined. A very weak heart is a decided obstacle to the thorough application of water by immersion. I have frequently continued the baths in patients whose pulse ranged between 120 and 128 with the best results, although the baths were made of shorter duration. The occurrence of hemorrhage from the bowels will interrupt this method, but I am confident this accident will be much less likely to occur. The rules for the application of this method, given by the Germans and by those who have practiced the cold bath treatment, are explicit and very simple. No more vigilance or accurate appreciation of the exact condition of the patient is required than is needed in the treatment of other serious diseases. The salutary effects of cold bathing are quickly recognized by the friends, and the physician who adopts this method in his practice will soon overcome all prejudice in the community and secure from his patient his grateful appreciation. If an antipyretic is to be given, my preference, after a thorough trial of antipyrin and acetanilide, would be sulphate of quinine, as advocated by Leibermeister, providing it is well borne. While quinine in doses large enough to be effective, (22½ to 45 grains), often produces nausea, temporary deafness and loud aural ringing, its effect in the reduction of high temperature continues longer, nor is it accompanied by the profuse prespiration and kidney disturbance which may be observed after the administration of the more recent antithermics. The quinine can be given by the rectum if irritability of the stomach is present, and usually it will effect a more thorough reduction of temperature and pulse with the least injury to the organism than any agent I know. I have often failed to produce marked reduction of temperature in typhoid fever with either antipyrin or acetanilide, and its effects on delirium, is, in my experience, *nil.* In the management of typhoid fever I have found it highly beneficial to remove the hair early in the disease and apply an ice cap to the head. This is continued until convalescence is declared. An unusual and contiuued diarrhœa is evidence of intestinal ulceration, and should receive appropriate treatment. The diet is an important matter in the treatment of typhoid fever. A measured quantity of liquid food should be given at regular hours, the quantity depending on the digestive powers of the individual. During the stage of convalescence, and while the symptomatic fever is in progress, I am satisfied the fever is often prolonged from irritation of the intestinal ulceration by injudicious feeding.

In conclusion, I submit this paper to your thoughtful consideration, not as a guide for the application of the cold water method, nor as a summary of the treatment of typhoid fever, but to contribute my mite in the awakening of general interest in this important subject, to the end that those not having done so will familiarize themselves with the details of the cold bath method of the Germans, and derive as much satisfaction from its application as I have enjoyed.

SELECTIONS.

THE TORSION OF ARTERIES FOR THE ARREST OF HÆMORRHAGE.

By J. B. Murdoch, M.D., Pittsburg, Pa., Surgeon Western Pennsylvania Hospital; Professor Clinical Surgery Western Pennsylvania College, etc., etc.

Upon no subject has our profession been more conservative than upon the manner of arresting hæmorrhage after wounds of the arteries and veins. Since the time of Celcus, notwithstanding the numerous methods which have been proposed for this purpose, but two, viz., the actual cautery and the ligature, have received the endorsement of the profession. But if the profession has been slow to endorse new methods, its confidence once gained has not been easily shaken.

This could be illustrated by the tenacity with which the surgeons adhered to the use of the actual cautery after the discovery of the ligature.

The effort made by Sir James Y. Simpson, of Edinburgh, to substitute acupressure; and the still more recent endeavor of Dr. S. F. Spier, of Brooklyn, to substitute constriction, for ligation, have most signally failed.

The same statement may be made also in regard to torsion as a means of arresting arterial hæmorrhage. It has not received the support of the profession to any great extent, but unlike the other rivals of the ligature, it has had champions for hundreds of years, and still holds a place as a valuable means of arresting hæmorrhage. The subject has received but little attention from modern surgeons.

The twisting of an artery to arrest bleeding is of ancient origin. It is spoken of by Celsus. The fact, often observed, that an arm or a leg may be torn from the body with the loss of only a few drops of blood, no doubt suggested the method. It has been advocated by such surgeons as Amussat, Dieffenbach, Schrœder and Syme. But the credit of bringing it prominently before the profession and establishing its efficiency is, no doubt, due to Mr. Bryant, the present distinguished surgeon of Guy's Hospital, London. At this Hospital, as I am credibly informed, the ligature is seldom used; torsion being chiefly relied upon. Mr. Bryant tells us in the last edition of his surgery, that in two hundred consecutive amputations of the thigh, leg, arm and forearm, all of the arteries were twisted. One hundred and ten being the femoral artery, and that in no case was there secondary hæmorrhage.

Mr. Bryant says: "The physiological arguments in favor of torsion are very great, and the practical advantages seem to be no less. After seven years experience in its practice applied to vessels of all sizes, the femoral being the largest, I have had no mishap.

I have observed that wounds have united more rapidly and kindly; primary union being the rule. There has been less constitutional disturbance after operation, and consequently less liability to traumatic fever, pyæmia and other complications, such as we are all too familiar with in the practice of surgery. I have had stumps heal in a week, and up in two weeks without one single drawback, rapid and uninterrupted convalescence following the operation."

Having given this experience of Mr. Bryant at Guy's Hospital I desire now to give my own as observed at the Western Pennsylvania Hospital in Pittsburgh. At this Hospital torsion is almost exclusively relied upon to check the hæmorrhage from wounded arteries or veins, whether the wound be produced by the surgeons knife or in some other way.

My experience with torsion as a hæmostatic dates back to the year

1872 when I became a member of the hospital staff. My colleagues had previous to my connection with the hospital been twisting arteries as large as the radial and ulnar. The facility with which this was done and the fact that the wounds healed kindly, and that secondary hæmorrhage did not follow, induced me to follow their example, at first timidly, but with success came confidence. Having been successful in the amputation of a fore-arm with no untoward result, I ventured next to twist the brachial after the amputation of an arm; soon after this the axillary, and then the popliteal, and finally the femoral. And now for the past fourteen years torsion for the arrest of hæmorrhage after all surgical operations has been the recognized, and almost the only method resorted to at this hospital.

It is to be regretted that records have not been kept of the number of large arteries which have been twisted to arrest the hæmorrhage, but the following table is given with entire confidence of accuracy. It is made from the records of the amputations.

Table showing the number of arteries divided in cases of amputation where torsion has been resorted to for the arrest of hæmorrhage at the Western Pennsylvania Hospital:

Femoral	95	times.
Popliteal	14	"
Axillary	15	"
Anterior Tibial	276	"
Posterior "	276	"
Brachial	62	"
Radial	40	"
Ulnar	40	"
Total,	818	times.

The manner in which the torsion was applied in these cases is the same as described by Mr. Bryant in his surgery. "A good pair of forceps is required that will hold the end of the artery firmly, that has no lateral motion, and with serrations blunt enough to obviate any laceration or cutting of the parts seized by the blades. The vessels should then be drawn out, as in the application of the ligature, and three or four sharp rotations of the forceps made.

In large arteries such as the femoral the rotation should be repeated till the sense of the resistance has ceased. The ends should not be twisted off. In small arteries the number of rotations is of no importance, and their ends may be twisted off or not as may be preferred."

In all the cases mentioned in the above table torsion of the arteries and veins was the method resorted to, to control the hæmorrhage. In addition to these cases, of which we have a record, the method of torsion has been the one resorted to in all surgical operations performed during this period, such as amputation of the female breast, the removal of tumors, the excision of joints, etc. It is within bounds to say that torsion has been resorted to in thousands of cases at this hospital without any mishap. We have had no case of secondary hæmorrhage which could fairly be attributed to the method of controlling the hæmorrhage. The advantages of torsion as compared with litigation are:

I. The greater facility with which it can be applied.

I am fully aware that this proposition is disputed, but to those who are familiar with both methods there can be no doubt that torsion is the easier of the two.

For the litigation of an artery an assistant is required to seize the vessel and draw it out while the ligature is applied. For torsion, the surgeon requires no assistant. The vessel must be seized with the forceps in either case. In torsion, it requires only three or four turns of the forceps to complete the process, which can be accomplished in as many seconds. When a ligature is applied, let the operator be ever so skillful, the thread may break or slip off the vessel, but if neither of these accidents occur, the process cannot be accomplished in anything like the same time.

II. Torsion is a safer method, being less liable to be followed by secondary hæmorrhage.

This proposition has been absolutely proven by the experience in the use of torsion at Guy's Hospital, and I have now given additional proof by the experience given in this paper at the Western Pennsylvania Hospital.

III. Healing is facilitated because the wound is free from any irritating or foreign bodies.

This proposition is so plain that it should not require any argument.

It was true before the antiseptic treatment of wounds had come into such general use, but is doubly so now. The catgut ligature, no doubt, is a safer ligature than silk, for it does not require an ulcerative process for its discharge, and when this ligature has been made thoroughly aseptic, is no doubt the best. But a ligature rendered thoroughly aseptic is not always at hand, and those surgeons who have had most experience with the antiseptic treatment of wounds will, I think, be the first to admit that, in spite of their most careful attention, septic germs are often introduced into the wounds by means of the ligature. Even after every precaution in preparation and preservation, the handling of the ligature, in its application, is a frequent source of infection.

But there are other objections to its use. A catgut ligature may dissolve before the artery has become closed by the natural hæmostatic process, or it may unbind. Both of these accidents have been frequent cause of secondary hæmorrhage.

On a recent visit to some of the principal hospitals in New York City, where the operators and assistants possessed the greatest skill, I was not surprised to see that in many instances the ligatures broke, and in other cases slipped off the vessels before they were secured. This was, to me, exceedingly annoying to witness, when I knew that the vessels could have been so easily twisted while they were in the grasp of the forceps. When the question was asked one of the operators, a distinguished surgeon, "*Why do you not resort to torsion?*" the reply was, "*We are afraid to trust it.*" This answer might have been given with equal force by Richard Wiseman, in the seventeenth century, when asked why he did not resort to ligature instead of the red-hot iron.

In a matter so important as the arrest of arterial hæmorrhage, it is proper that surgeons should be conservative, but there is such a thing as pushing conservatism too far. In the torsion of arteries I claim we have an improvement upon ligation. Its claims for recognition rest on physiological arguments which cannot be shaken, and its reliability as a hæmostatic has been proven by abundant experience.

DISEASES OF THE MOUTH (NON-SURGICAL). By F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, Cincinnati, O., etc.

STOMATITIS GANGRENOSA.

Stomatitis gangrenosa is a disease which may occur at any time of life, but is most commonly a children's affection, being found most frequently between the ages of three and seven years. In German it is called noma, which term is employed by the French, although they also use stomatite gangreneuse. English writers speak of the affection as cancrum oris, gangrene of the mouth, gangrenous stomatitis and noma. Up to the present time we are not in possession of sufficient accurate knowledge to say definitely whether any gangrenous process which occurs upon the gums and cheeks is to be called cancrum oris or not. From clinical evidences it is most likely that a specific process goes on in those cases which are called noma, although it would be manifestly improper to exclude any gangrenous process from this classification until the cause of the whole process is accurately determined. Some knowledge has been recently contributed to the etiology of this disease by Lingard (*Lancet*, 1888), and Ranke (*Jahrb. f. Kinderheilkunde*, III. xxvii., 1888), which permits us to hope that in the future this disease will be better understood than it is at the present day.

The affection is a comparatively rare one; in my own experience, one case in about five thousand. Ranke (*loc. cit.*) states that in eleven years in Munich, seeing from four thousand to five thousand children yearly, he has seen only two cases (this in dispensary practice). The disease is a little more common in hospital experience, as bad cases are more frequently seen in hospital practice; in private practice the frequency depends very much upon external surroundings.

When we speak of stomatitis gangrenosa we mean a gangrenous process which begins upon the gums or inner side of the cheek, spreading with great rapidity so as to involve the whole substance of the cheek, and extending more or less to the surrounding tissues.

Etiology.—The first question to be answered is as to the infectious nature of the disease. There are a great many instances upon record in which the process has occurred in one ward of a hospital, in several members of a family, etc., so that evidence in this direction exists of the infectious nature of the affection. Again, on the other hand, every one who has seen any cases at all will have seen such in which it was impossible for the patient to have come into contact with any one who had had a gangrenous process of any kind. The experience of any one individual is too small to decide this question definitely, yet I venture to state that most physicians would answer it negatively. There are many things which speak in favor of the infectious nature of the disease; that it has occurred as stated above; that the process usually occurs, primarily, at the junction of the skin with mucous membranes, the anus, the genitals, the mouth, where infection takes place most readily (Gerhard); that the disease is found in affections in which the mucous membranes are in the best possible condition for the reception of infectious material. But proof, except by inference, is still wanting. There can be no doubt of the fact that cancrum oris occurs spontaneously, without the existence of previous cases.

No disease exists in which the predisposing cause is accepted so universally as in stomatitis gangrenosa. This predisposition consists in a reduction of health in a way which, for the present, cannot be accurately defined. Ranke says, concerning it: "We know that other carriers of infection require a certain amount of predisposition in order to develop their functions. In this direction the supposed virus of noma would have to be placed at the extreme end of the list of infectious agents. It would be necessary to premise that its attacks upon a healthy cell would be absolutely futile, and that it can manifest its effects only upon extremely weakened cells."

From a clinical standpoint, we know that the weakening of the cells is produced by certain diseases: the acute exanthemata, especially measles (forty per cent. of all cases, Barthez and Rilliet), long-continued fevers and infectious diseases, typhus, whooping cough, syphilis and scorbutus, chronic intestinal catarrhs and malaria. To this must be added the excessive use of mercurials, although this causative factor was very much over-estimated in former days. Bohn has shown the importance of stomatitis ulcerosa as an etiological factor for noma, possibly as its forerunner, and therefore of great importance; but the connection between the two diseases, in all probability, ceases there. Malaria is looked upon by Hirsch as of prime importance simply from geographical evidence; and while it cannot be denied that the reduction of general health may be produced by malaria, the direct cause must be found in something else.

In general terms, it may be stated that all those predisposing causes which have been enumerated under stomatitis ulcerosa are accepted for stomatitis gangrenosa. The fact, however, must be insisted upon that predisposition is so important that in any given case of noma the general condition of the patient would immediately be noticed by any physician, and would be a source of alarm upon very cursory inspection.

Investigations as to the direct cause are, as yet, in their infancy. Cornil and Babes make the statement that short streptococci are found in stomatitis gangrenosa, and, in certain cases, rods like those of pulmonary gangrene. No allusion is made to cultures or inoculations by these authors. Ranke (*loc. cit.*) has found streptococci resembling those described by Koch as producing progressive tissue-necrosis in field mice. He has made no cultures, but has inoculated rabbits with pieces of tissue taken from the immediate neighborhood of the gangrenous process. The animals died, but in no instance was he able to produce gangrene, so that in his conclusions, at the end of his paper, Ranke states that, "up to the present, the specific nature of the cocci present in cancrum oris has not been proven." Lingard (*loc. cit.*) found bacilli in thread-like growth 0.004 mm.–0.008 mm. long, 0.001 thick. Cultures were made as well as inoculations. Young pigs and calves were killed by these inoculations on the tenth and eleventh days, and septic lesions of the heart were produced. No statement is made concerning the production of gangrene, except that the lower forms of life were also found in certain petechial spots in the human subject. It is difficult to judge of these results, as the heading of the article is "Cancrum Oris or Ulcerative Stomatitis," terms which, according to our view, are not synonymous. As, however, the term cancrum oris is so distinctive, it has seemed to us that only the gangrenous process could be referred to.

It would be rash to try to bring these various observations into accord, the one with the other; as a *résumé* it might be well to state that all these observers have found lower forms of life in noma. Ranke has found them within the tissues; Lingard has cultivated them; both have killed animals, the one by inoculating them with the tissue, the other by injecting cultures. In no instance was there produced anything resembling the pathological changes of noma, although Ranke introduced a piece of diseased tissue under the mucous membrane of the mouth. It is impossible to state whether the poison has been isolated by Lingard or whether he has found the virus of something else. His description does not correspond with the one given by Frühwald (*Jahrb. f. Kinderheilkunde*, ii., xxix., 1889) for a bacillus found in ulcerative stomatitis, and does not agree with the pictures seen by Ranke. Knowing, as we do, the absolute importance of a predisposing cause, it is futile to discuss the method by which the direct cause acts before this cause has been isolated, so that the question cannot be definitely answered whether it comes from within the system as a poison of some sort, or from without as a lower form of life.

In the very great majority of cases some lesion is found upon the mucous membrane of the mouth, which precedes the attack of gangrene. In some instances no lesion could be found, but on account of the locality of the process it has been found impossible to exclude such with absolute certainty. The case which has often been quoted from Gierke's article (*Jahrb. f. Kinderheilkunde*, N. F. 5, p. 269), as opposed to this view, cannot be considered in this light, as the gangrenous process evidently arose from a stomatitis ulcerosa. The appearance of gangrenous spots upon the skin, in this case could be readily explained, if the assumption of a specific virus is accepted.

Pathological anatomy.—The process is one of rapid phlegmonous gangrene. Around that portion which has been destroyed there is found an infiltrated zone (Ranke, *loc. cit.*). This is characterized by true necrobiosis; all evidence of pre-existing tissue has disappeared under the microscope; in its stead there is found a perfectly homogenous substance which shades off in the direction of the adjacent tissue. This homogenous substance is already dead, and around it we find the connective tissue increased, its corpuscles in cell division and its blood-vessels closed by thrombi. The micrococci are found both in the homogenous as well as in the proliferated tissues. Ranke has made interesting observations concerning the karyokinetic figures which, as he states, are found both in the fixed as well as in the wandering connective-tissue corpuscles and in the muscle-cells within the proliferated zone.

Symptomatology. I. *General.*—These symptoms vary very much, depending upon the disease upon which noma is ingrafted, for a healthy child cannot be attacked by noma. It may be stated that the intensity of the general symptoms is in direct ratio to the severity of the disease. A great many cases are upon record in which the children seemed in the beginning to be very little affected by the development of noma. Bohn gives a description of the condition which leads one to infer that the children, in this disease, are rather cheerful than otherwise. While the fact exists that frequently patients will be attacked by stomatitis gangrenosa, and pay very little attention to the local process, pulling out loose teeth, picking off pieces of gangrenous tissue, etc.; in a very short time general symptoms supervene, which show that we are dealing with a process which produces a very deep impression upon the general condition. Fever may not be present in the beginning, but develops sooner or later, reaching 104° to 106° F., becoming hectic, especially when suppuration is present, and before death the temperature frequently falls to subnormal. The pulse usually follows the temperature, but throughout is weak, easily compressible, and small. Diarrhœa is present in almost every case. This diarrhœa is of the most intractable variety, and, as Gierke has pointed out, must be due to the swallowing of material from the diseased surface in the mouth. Lesions in the organs are also common, especially catarrhal pneumonia, probably due to the entrance of septic material into the bronchial tubes. Diphtheria has been observed in several cases (West, Gierke). As a result of the general infection, the local symptoms, the fever, the diarrhœa, death usually comes to the patient by exhaustion. The children become apathetic, refuse all nourishment, are restless, and finally die in collapse. The nervous system is rarely implicated, even in the worst cases.

II. *Local.*—The local process usually begins suddenly; if the result of a stomatitis ulcerosa, the symptoms of ulceration are changed to those of gangrene; if upon a comparatively healthy mucous membrane, the physician can never be in doubt as to the nature of the process. It is, essentially, a moist gangrenous process, and characterized by all the symptoms of this condition. The beginning of the process is to be found, usually, upon the gums or upon the inner surface of the cheek, near the corner of the mouth, and, it is said, more frequently upon the left than upon the right side. Possibly, the first thing that will strike the observer is the appearance of the peculiar odor of gangrene; if stomatitis ulcerosa has preceeded the development of noma, the fetor of the former disease is covered over by the intense and penetrating odor of noma. Upon examination there will be found at the point of development an ulcer, gangrenous, which spreads with great rapidity. Very soon the cheek begins to swell, so that if taken between the thumb and forefinger it will be felt to be thickened throughout its entire structure. This swelling is more or less œdematous, the skin becomes waxy, and in a very short time, sometimes within twenty-four hours, the whole side of the face, up to the eyelids and down to the jaw or upon the neck, becomes involved. This cheek may be painful upon pressure, but more commonly the patients do not complain of painful sensations. If we now look at the ulcer within the mouth we see that it has grown very much in depth, evidently eating its way through the substance of the cheek. As it comes nearer the integumentary surface, symptoms of its approach begin to manifest themselves upon the skin. The latter becomes discolored, red, blue, purple, black, or a combination of several shades. The reddish tint is usually observed in the beginning, and the spot of gangrene may be surrounded by a red areola. When the gangrenous process is completed there is always developed a dark spot. In a great many cases a bulla is formed, over the spot to become affected with gangrene, filled with ichorous fluid. The epithelial covering breaks, and, with this, perforation of the cheek takes place. In case the bulla has not formed melting away of the tissues takes place in one direction only, from within outward, the skin then may beeome mummified, but is finally softened and breaks down. Rarely is the gangrenous process completed when perforation has taken place. In one case which came under my observation, resulting from chronic malaria, there was what appeared as a cleanly-cut, oval hole. The rule is that the process now extends, involving the soft parts of the cheek, going down upon the neck, eating into the nose, the eyelids, affecting the frontal bone, destroying the eye, but rarely extending to the other side. In the mouth the devastation is apparently greater than upon the surface. While we find the destruction within the mouth to be very great in all cases, upon the surface it may be comparatively limited. Nothing is spared; the bones are denuded, the teeth loosened, the tongue and hard palate may become affected, even the soft palate and the tonsils may become involved. The whole is converted into a black, fetid, pulpous mass. The patient may now be considered in a frightful condition, and there is hardly any sight so repulsive as a child with well developed noma. If to this appearance there is added, as is not infrequently the case, the entire apathy of the child for the local condition, we have a combination which calls for the utmost sympathy on the part of the surroundings.

With all these changes the patient complains little of the local condition. The flow of saliva is very much increased. At first the patient swallows very well, but ceases to do this as the disease progresses. Again, the appetite may not be diminished; but this also disappears in a short time. The odor that fills the room is frightful; the whole house is sometimes filled with it, so that the diagnosis ef gangrene can be made as one enters at the front door. Hæmorrhages are quite rare on account of the fact that all the blood-vessels are closed by the thrombi.

The course of the disease tends either to death or, what is very much rarer, recovery, either spontaneously or as the result of treatment. When death comes it is as the result of the general condition. When spontaneous recovery takes place we find a line of demarcation around the gangrenous spot, the surface is finally converted into one covered by granulative tissue, and there takes place cicatrization, leaving frightful scars. This is also very rare. In most cases that have recovered it seems that the treatment has had something to do with the result. Relapses take place, but they are comparatively rare, —two cases out of twenty. (Gierke.)

The duration of noma varies from one to two weeks. Perforation of the cheek has taken place in as short a time as twenty-four hours, but usually takes three or four days.

Prognosis.—It is almost useless to discuss the factors which go to make up our prognosis in a case of noma, as nearly all cases die. The mortality is given as ranging from seventy per cent. to ninety per cent. of all cases affected. The statement can be made that the more intense the local process the greater the mortality. This seems paradoxical, yet the fact must not be lost sight of that when gangrene ceases, the patient still being alive and not affected by complications, the general condition upon which the final result depends must certainly become improved. Complications, especially catarrhal pneumonia or diphtheria, will render our prognosis absolutely unfavorable.

Treatment. I. *Prophylactic.*—Unfortunately, little can be done in this direction. The disease may develop when and where it is least expected. Its development is very sudden, and, as has been stated, it may develop in patients whose mouths are apparently perfectly healthy. On account of the rarity of the affection the physician does not think of noma, and, fortunately, this is not necessary. In hospital practice the careful watching of individual cases, their possible isolation combined with antisepsis are certainly of value. The modern hospital, however, can hardly be charged with epidemics of noma, at least there are none such upon record.

The treatment of a case which has developed can resolve itself into two principal divisions,—1, the general; 2, the local treatment.

Of the general treatment little need be said. The disease is found in reduced subjects, usually in such as have been worked at by physicians precisely in that direction which seems needful for the cure of noma, the improvement of general health. The indications in every case are to keep up the strength of the patient until it has become possible to make the attempt to cure the local process. The tonics and stimulants would come into play here, but always with the needed precaution not to disturb the digestion. The patient must be fed with condensed, nutritious food, if necessary, predigested.

The local treatment has resolved itself into an artificial limitation of the gangrenous process, by substiting an artificial destruction of tissue. For this purpose a great many substances have been employed. It is essential that the remedies be used as early as possible. Barthez and Rilliet, as well as others, state that the caustic ought to be used "before the deep tissues of the cheek are invaded." The caustics which seem to enjoy the greatest reputation then hydrochloric acid, then nitric acid (West). Evanson and Maunsell report good results from the local application of sulphate of copper in six-per-cent. solution. The same authors also speak highly of sulphate of zinc in twelve-per-cent. solution. But it has always seemed to me that if anything is to be accomplished by treatment at all, in this disease, we ought to have recourse to those remedies which act quickly, deeply, and thoroughly. For this purpose caustics must be used whose action is intense, destroying that with which they come into contact and producing distinct re-action. These caustics can be divided into chemical and thermal. Of the latter class we have the white-hot iron, the galvano-caustic wire, and the Pacquelin cautery. The chemical caustics that have been used are either in solid or fluid form, and nearly every chemical has been used that has caustic properties. Of the thermal caustics it has been said that their application is difficult and their action inexact because we could not tell where to find healthy tissue. The same objections (Bohn) have been raised against fluid chemicals, and Bohn, therefore, recommends nitrate of silver in stick. The great advantage of nitrate of silver, applied in this way, is that it does not attack healthy tissue more than seems necessary, but destroys all that is dead or becoming gangrenous, (just as it acts in lupus vulgaris). The only objection to the use of nitrate of silver is whether its action upon the healthy tissue is sufficiently energetic to produce any benefit. If the indication is to cause deep destruction of healthy tissue, so as to produce demarcation well marked, the nitrate of silver cannot be relied upon. It is certainly a fact that some cases of noma will get well spontaneously. The only case I have ever seen recover did so with applications of a solution of permanganate of potassium without the use of any cautery, and, therefore, not all cases of recovery are to be attributed to the remedy used. In the two cases of recovery of Gierke, chloride of zinc and pyroligneous acid were used. Forester (*Jahrb. f. Kinderheil-*

kunde, v. p. 328) reports a case which was cauterized by using dilute muriatic acid, then nitrate of silver in stick, and finally in solution. The results of Evanson and Maunsell, referred to in high terms and corroborated by J. Lewis Smith, certainly show that some patients will get well without very much treatment, certainly without cauterization. As far as I am concerned, I would not like to take the risk of treating any case of noma without the use of a caustic of some sort. It seems to me that with the very bad prognosis, *quoad vitam*, the destruction of a little more or less tissue ought not to be taken into consideration at all, especially when we bear in mind that much more tissue is already dead than appears when we judge by the classical gangrene color only. The object of a cauterization must be to destroy not only the waxy zone, but to go into the tissue, for some distance, that seems perfectly healthy, if we can dare to hope for setting up a process of repair, or closing up the lymphatics against further invasion.

If circumstances permit, the patient should he anæsthetized before the caustic is employed. This is frequently inexpedient on account of the great weakness of the patient. Before the caustic is employed all the necrotic tissue should be removed with forceps and scissors, and then the operator is ready. The galvano-caustic wire or Pacquelin's thermo-cautery seem to me to offer advantages that are not afforded by any other means. Their action can be limited, they can be made to act as deeply or as superficially as the operator may choose. It is necessary to take into consideration that when the cautery is applied when it should be, the inner surface of the cheek is the place where it will be used most frequently. It will immediately be seen how readily this can be done with either of these instruments, when it would be very awkward with a fluid acid and very difficult with any of the fluid pastes. The question of how often the tissue should be cauterized has been answered: not more frequently than once in twenty-four hours. There certainly cannot be any law put down, as every case is a law unto itself. With cauterization the ordinary antiseptic methods of treating wounds will be sufficient local treatment for most cases of noma. Sometimes poultices will be required, sometimes the granulating surfaces will need to be treated. The surgical treatment of the cicatrices ought to be put off as long as possible, as it has been found that plastic operations do not succeed very well when performed early upon patients that have had noma, and also that noma may recur as the result of these operations.

It is unnecessary to add that the outlook, with all methods, with everything in apparently good condition, remains unfavorable to the patient, do what we will and do it as we will.

VARICOSE VEINS OF THE LOWER EXTREMITIES. By William H. Bennett, F.R.C.S., London.

GENTLEMEN, Of all the advice tendered to the student during his clinical studies, there is probably none more thoroughly sound than that which urges upon him the necessity for acquiring an intimate knowledge of the most common diseases, and at the same time warns him against devoting too large a share of his short curriculum to the study of those rare and interesting cases which are naturally so fascinating to the beginner. Such advice cannot be often enough repeated, nor can it be too closely followed, for I presume it must fall to the lot of most of you, a little later in your career, to be called upon to treat diseases which are ordinary rather than rare, and you may take it as a fact that by the success which follows your treatment of these common affections will your ability for the most part be estimated by that section of the public from which your patients come. However much the out-patient departments of our general hospitals may be from time to time adversely criticised, there is not the least doubt that—at present, at all events—they afford the only readily accessible means by which the study of common diseases is open to the ordinary student, and those of you who have attended my practice amongst the out-patients here will recollect how constantly I was in the habit of calling your attention to valuable series of these common affections. I hope, therefore, that I need offer no apology for devoting this and the two subsequent lectures to the consideration of Varicose Veins of the Lower Extremities, one of the commonest as well as one of the most troublesome of surgical affections. I propose to take as a basis for my observations the accompanying tables, in which are included, I believe, all the cases which came under my care, in the out-patient department of St. George's Hospital, in which the varicose veins were obvious and pronounced, and in which treatment was sought either on account of the abnormal veins themselves or for some condition directly dependent upon them. Twenty-three other cases, not tabulated, in which the symptoms were unassociated with any obvious varicosity are of interest, and will be considered separately. I shall also have to refer to various cases which have been under my care in the wards of the hospital and in private practice. At the expense, I fear, of being somewhat wearisome, it is my intention first to briefly consider seriatim the several points suggested by the headings of these tables—not that I suppose any new or startling facts will be forthcoming, but because, so far as I know, it is a long time since any analysis of such a large number of cases of this affection has been published, and also because I believe it cannot be otherwise than profitable to occasionally test the accuracy of teachings, some of which owe their acceptance to little more than tradition, and which may in course of time require modification.

Relative number of cases occurring in the two sexes.—The number of cases amongst the females exceeds that on the male side by 21.62 per cent., which may be easily accounted for by the large proportion of cases apparently dependent on pregnancy; indeed, if the column of causes under this head be noticed, it is manifest that in the absence of pregnancy the number of cases in females would be considerably exceeded by those in the males. This is more particularly seen in cases affecting both limbs. Taking the cases in which the affection is limited to one side, the number in males actually exceeds that in the opposite sex (particularly on the right side) in spite of the probable influence of pregnancy as a determining cause.

EXTENT OF THE DISEASE AND THE VEINS INVOLVED.

1. *General varicosity throughout leg and thigh.*—(*a*) *On both sides.* Here the difference in the number of cases occurring in the two sexes is most marked. In many of the cases on the female side there was a distinct history of the affection having first shown itself very slightly in one leg, and then to have subsequently affected both limbs equally after two or three pregnancies, the limb originally affected being, as a rule, the left. In some of the cases the disease commenced in both limbs simultaneously after the first pregnancy. (*b*) *On the left side only.* Here the number of cases are about equal in the two sexes, being slightly in excess on the male side. (γ) *On the right side only.* It is remarkable that in the females not a single instance of general varicosity was noted, although in three cases it was stated by patients who were affected in both limbs that there had first been varicosity on the right side, the left having become afterwards involved, in consequence of pregnancy in two of the cases, and "low fever" in the other. Amongst the males, on the other hand, there was evidence of general varicosity in many cases; and it is noteworthy that in five of these there was fulness of the veins throughout the whole limb at the time of the first appearance of the disease.

2. *General varicosity not extending above the knee.*—Here, again, the difference in the number of cases in the two sexes is very marked, and is not easily explained. On the male side not a single instance presented itself in which *both limbs were involved*, whereas the females produced fourteen cases; in three of these the disease appeared in the second limb after the first pregnancy, and as the patients were young it is probable that successive pregnancies will, if they occur, entail varicosity throughout both limbs. Of cases limited to the *right or left limb only*, it will be seen that the males afford far more examples than the females, the difference in numbers being less marked in the right limb, although in that the number is much greater in the males.

3. *Varicosity of the veins over the popliteal and fibular regions only.*—Of this condition no instance occurring in *both limbs* was seen amongst the females, but it was stated by a few of those who presented themselves with general varicosity of both limbs that the disease was first noticed in these regions, and gradually increased. In the males there were fifteen cases, but I could obtain no evidence of the condition having become general in any man. In the examples of this class which were confined to *one limb* the women were affected to the extent of thirteen cases in each limb, whereas the men provided no instance in the left limb, and only five in the right.

4. *Varicosity limited to the internal saphena and its immediate branches.*—The aggregate number of these cases was rather larger in the females, but the instances occurring in *both limbs* were very much

more common in the males. When confined to the *left limb* they were almost equal in number in the two sexes, but in the *right limb* the cases on the female side very greatly exceeded those in the males. In all the patients seen with this condition the internal saphena was affected from end to end, including its radicles on the foot; but there was no fulness or increase of tension about the deep parts of the limb; nor was there, when the affection was confined to a single limb, any general increase in size on the affected side more than could be accounted for by the enlargement of individual and manifest veins. As a rule, the varicosity in the leg was in excess of that in thigh, but in about 20 per cent. of the cases the tortuosity or size of the veins in the thigh exceeded that in the leg. In a certain number of instances the disease was most evident as a large mass of veins occupying the lowest third of the thigh, above and below which the saphena was only slightly involved, and in the majority of these there was a large globular varix at the saphenous opening. In most of the cases of varix limited to the saphena occurring in men, the affection was first noticed at the ankle, and gradually extended upwards. In fourteen instances, however, the fulness, when first observed, involved the whole vein; four of these were on the left side and ten on the right, these latter having become manifest early in life, a point of interest in relation to the possible hereditary nature of some of these varicosites. As to the point at which the disease was first observed in the women no definite evidence was forthcoming, in consequence of difficulties due to pregnancy, excessive constipation, and menstrual troubles.

5. *Mass of varicose veins at inner side of thigh, overlying but not involving the saphena.*—Only six cases were seen in which this condition could be with certainty diagnosed; two of these were in females. In all the cases the varicose mass could be entirely separated from the saphena, which, apparently healthy, ran beneath. The veins of the leg, in the men, were not visibly affected, but in the women, both of whom had borne children, there was some fullness below the knee. In two instances, both males, there was a globular varix at the saphenous opening. It is possible that some of the cases previously mentioned, in which a large mass of veins existed in the lower part of the thigh, the saphena being almost healthy above and below, may belong to this class; indeed, I have recently dissected out a mass of this kind from a patient in the Belgrave ward, which proved to be quite unconnected with the saphena.

6. *Varicosity limited to veins of ankle and foot.*—The seven instances of this condition occurred in females, and were confined to the right limb. In all, with the exception of two cases which followed upon fracture of the leg, the disease was noticed at an early age.

7. *Isolated mass of varicose veins over calf of leg.*—This appears to be the rarest form of varicosity met with in the lower limbs. Only four cases occurred. All were in males—one in the left leg, three in the right—and there was no evidence of other varicosity. In all the

external saphena seemed to be involved. I have recently had another case under my care in the hospital, and on dissecting out the mass, which consisted of fifteen inches of greatly dilated veins, the efferent vessel was found to be the proximal part of the external saphena, whilst the afferent vessels were the distal part of the same vein, and two small veins which came through the fascia, one on each side of the upper end of the tendo Achillis.

8. *Circumscribed varix at saphenous opening.*—This condition occurred much more frequently in men than in women. The seven instances in which the affection existed at both saphenous openings were limited to males with varicosity *in the two limbs.* Five of these instances were in cases of general varicosity of the legs, and more or less of the thighs, the remaining two being in cases of varicosity confined apparently to the two internal saphenas and their immediate branches. In varicosity of *both limbs*, with varix at the saphenous opening on *one side only,* the percentage occurring in males largely exceeded that in the females on the left side, but on the right the percentage amongst the women was rather greater than in the men. In the males with general varicosity of *one limb only*, the varix at the saphenous opening was present on the left side nearly thrice as often as on the right, whereas with the females the percentage was larger on the right. In all the patients presenting this condition the saphena itself was large or varicose, although in a few cases to a hardly perceptible degree. I have recently seen a case in which there was a globular varix in Scarpa's triangle of the kind under discussion, without the least sign of varicosity of the saphena or any other vein; the patient had long ago been told it was a hernia, and, indeed, came to me with a view to submitting himself to the operation for the radical cure of that affection. The condition had existed from childhood.

Causation.—Foremost amongst the causes commonly spoken of as producing varicose veins are constipation and pregnancy; the latter, acting either alone or, as often happens, in combination with the former, accounting almost entirely for the large excess of cases of general varicosity seen in females. It is, however, important to realize that most of the so-called originating causes are, in reality, only causes which determine either the increase of the disease or of certain symptoms connected with it, and are not necessarily associated in any way with its real origin. The only obvious originating causes of general varicosity in the lower limbs appear to be the following:

α. Obliteration of a large vein following upon (1) the formation of thrombus, such as may occur in typhoid fever, certain forms of gout, and other affections; or (2) injury, of which five instances are noted in my tables, all being cases of fracture (one of the pelvis, two of the thighs, two of the leg).

β. Local pressure, such as that produced by tumors or fæcal accumulations, the latter being limited, for all practical purposes, to the left limb, and being, in my mind, of rather doubtful value as a cause.

γ. Pressure of a long column of blood may, in the case of the long saphena, placed as it is outside all accessory muscular support, no doubt account for the fullness and slight elongation, hardly amounting to real varicosity, which is commonly seen in that vein amongst subjects who follow occupations necessitating long standing; but in the exaggerated varix, which is not uncommon in this vessel, some other cause must exist, since it occurs indifferently in all classes of individuals, and quite independently, at times, of continuous standing.

It is, however, obvious that in a large number of cases, especially those affecting the right limb, varix occurs without any such obvious cause. The question, therefore, arises as to whether a limb in which the venous apparatus was originally perfect becomes varicose till late in life, excepting as the result of some obvious cause of the kind alluded to. Personally, the more I see of this affection, the more I incline to the belief that a large proportion of these varicosities originate in congenital defects in the venous apparatus, which in some patients are distinctly hereditary. If this be the case, it would naturally be more easily demonstrated in instances of varicosity affecting the right side, which for all ordinary purposes may be assumed to be free from the influence of that doubtful originating cause, a loaded colon. A reference to the tables will show that the percentage of cases on the right side with a distinct hereditary history is about equal in the two sexes —viz., rather more than fifty per cent. That the disease must—sometimes, at all events—depend upon peculiarity in the veins themselves seems probable from the way in which severe varicosity develops in men who are robust in all other respects, and who do not suffer from constipation or other condition in the least degree likely to produce the affection. Further, the disease affects all classes, rich and poor, with curious impartiality; it occurs in the active and sedentery, in the weak and strong, in the short as well as the tall, and is, to a great extent, independent of occupation. Again, the difference in the behavior of the veins of the two limbs when these are subjected to precisely the same conditions is sometimes remarkable, for it is occasionally found that under these circumstances varicosity will develop in one limb only, leaving the other unaffected, either entirely or until a much later period in life. The best illustration of this is seen in varicosity arising apparently from the local constriction produced by the use of garters, in which the disease may be confined to one side, perhaps the right. I hardly see how the occurrence of such cases can be explained otherwise than by assuming that some inherent defect or abnormality exists in the venous apparatus. I have been unable to connect the *occupation* of the patient in any definite degree with the actual production of this disease, excepting in certain cases already alluded to, in which the long saphena was involved; but some occupations which entail long standing, exposure to great heat, or repeated slight injury, undoubtedly tend to increase the varicosity, or cause complications such as thrombus, ulcer, eczema and œdema. The influence of *stature* is interesting, but vague. As a rule, the veins seem to be affected in nearly equal proportions in the tall and short, though general varicosity, without much affection of the saphena or other purely subcutaneous veins, is more commonly seen in short than tall subjects. On the other hand, cases in which the disease is more or less limited to the saphena are not often seen in any but tall patients. The result of local constrictions from external sources (*e. g.*, the use of garters) have been referred to incidentally, and although I believe more importance than necessary has been attributed to these local constrictions in the production of the disease, they have, without doubt, a tendency to cause a rapid increase in the varicosity, and may give rise to painful complications. It is, of course, difficult to obtain precise information from females as to these probable causes in consequence of the constant association of pregnancy and constipation, the former predominating when the disease affects both limbs, and constipation when the left side only is involved.

Age at which the disease was first noticed.—Under this head was noted the time at which the patient's attention was first called to the affection. This has, of course, but little real bearing upon the date of the first appearance of the disease, for in some of the cases it was noticed accidentally after trifling injury, and in many others it was obvious that the varicosity had existed long before it was seen by the patient. The *males* afforded no instance in which *both limbs* were affected before the age of twenty-one, but between twenty-one and twenty-five no less than forty of the total number of ninety-two cases first attracted attention. In cases confined to the *left limb*, two of the thirteen examples noticed before the age of twenty-five had existed from "childhood," and three gave trouble before the age of twenty-one. In varicosity of the *right side only*, fifty per cent. of the cases were noticed prior to the age of twenty-one, five of these having been observed soon after puberty. It is noteworthy that no case in which both sides were involved commenced after forty. The *females* presented few cases affecting *both limbs* before the age of twenty-five, but between twenty-five and forty an enormous increase is shown, which is easily accounted for by the effect of child-bearing. Of the cases limited to the *left side*, about thirty-five per cent were noticed before the age of twenty-five; of these, three caused trouble before the age of twenty-one and after pregnancy. When the *right limb* only was involved, more than half the cases were noticed before twenty-five (twelve of which attracted attention prior to the age of twenty-one). The only examples of varicosity commencing after forty were the fourteen cases in which the right limb was affected.

COMPLICATIONS.

Under this head are noted conditions which were held to be fairly dependent for their existence or continuance upon the varicose veins, or which owed their origin to the same cause.

1. *Hæmorrhoids.*—As may be expected, these occurred more

commonly in patients in whom *both limbs* were varicose (*i. e.*, in cases in which general varicosity was most advanced), and under these circumstances were more frequently seen in women than in men. In varicose veins of the *left limb* this complication was again found more frequently in the females than in males, in whom it was only present in association with excessive constipation. It is remarkable that no instance of piles was seen in males when the varicosity was confined to the *right limb*, only three being seen in females. In two of these the piles followed upon lingering parturition long after the original varicose veins had been noticed, and in the third they seemed to have been caused by uterine displacement in a virgin.

2. *Varicocele.*—In the majority of the examples of this complication, its existence was unsuspected by the patients. In the cases occurring with varicosity of *both limbs*, two were dou[illegible] and with one of these there was also severe piles; the remaining seven varicoceles were on the left side. Those connected with varicose veins in the *left limb* only were all unknown to the patients, except in one case where there was neuralgia testis. The two instances associated with varicosity in the *right limb* only were both known to the patients, but caused no trouble. With reference to this complication, one point of interest was elicited—viz., that, with one exception, all the cases of varicose veins in which varicocele was present were noticed at a comparatively early age.

3. *Varix over pubes.*—The two examples of this condition both occurred in males; one followed fracture of the pelvis, and the other was a sequel to typhoid fever; in the former there was general varicosity of the left limb, and in the latter both limbs were involved.

4. *Varicose veins in labia.*—The two instances of this affection were both seen in cases of the most exaggerated varicosity of the lower limbs I have ever met with. The patients were very fat multipara. In one attention was called to the complication by the formation of an abscess in the labium, presumably due to the breaking down of a thrombus. There were extensive piles in both cases.

5. *Ulcer and eczema.*—Under these heads there is little that requires comment. A large number of the ulcers, which presented every variety, were due to slight injuries to parts already eczematous, a few were the result of the bursting of varicose veins, and a small number were apparently spontaneous, but, in reality, resulted from the breaking down of thrombi, this cause being most commonly seen in men. A considerable proportion of the cases of eczema were associated with multiple hæmorrhages (purpura). It is curious that on the female side no instance of simple eczema was met with in cases of varicosity confined to the right limb.

6. *Persistent* (*solid*) *œdema.*—These cases were all of long standing, and were limited in each instance to the lower two-thirds of the leg. The parts were greatly hypertrophied, of stony hardness, and insensitive. In all, there were scars of old ulcers, and in five a distinct history of syphilis was present.

7. *Recent thrombus.*—In connection with this complication occurred some of the greatest differences between the men and women, for whilst in the former there was no example of recent thrombus in varicosity affecting both limbs, there were twenty-three cases in the total number of 163 varicosities of both limbs in females. In the majority of these the thrombus was confined to one side, principally the left, and seemed to be associated with either the puerperal state or menstrual irregularities. Thrombus in cases of varicose veins limited to the *left limb* was more frequent in men than women. Three of the instances seen in the males were due to injury, four were examples of passive coagulation (gouty ?) in old age, and two occurred spontaneously in young subjects. For the seven cases on the women's side no definite cause could be found. In varix affecting the *right limb only*, no recent thrombus was noticed in the females ; but in the males there were seventeen cases, all due to slight injuries, excepting three which were spontaneous in origin.

8. *Old thrombus.*—Evidence of this condition existed in many cases in both sexes, and varied from the minute phlebolith to a mass of hard, tortuous, insensitive blocks, several inches long ; the largest seen in the cases tabulated was in a man in whom the whole of the saphena below the right knee was completely occluded ; this block had been years in forming ; it began above the ankle, and gradually increased by the occasional deposit of new coagulum at the proximal end of the old thrombus, which caused pain and tenderness for periods varying from three days to a fortnight, and then gradually became insensitive, hard and permanent. I have recently had under my care in the hospital a still more exaggerated instance of this " creeping " form of thrombus, which extended from the ankle to the middle of the thigh, and was still growing.

9. *Valgus.*—The occasional association of valgus with general varicosity of the veins of the lower limbs is of certain interest in connection with the possible hereditary origin of some of these cases. In the five instances noted in my tables, the valgus had existed from childhood, and the varicose veins had become troublesome very early in both limbs simultaneously. The patients were all males, and there was in each case a history of valgus and varix on the part of the father.

10. *Uncomplicated cases.*—At first it may appear singular that so small a proportion of the total number of cases should have been free from complication. In reality, however, this is easily explained by the fact that my tables include only hospital patients who, as a rule, do not apply for treatment until the symptoms from which they suffer are sufficient to interfere with their occupations, the result therefore being that treatment is generally sought, not on account of the abnormal veins themselves, but for some complication immediately connected with them.

A careful consideration of the cases tabulated and many others seen in hospital and private practice, in addition to dissections, into the details of which I need not enter now, seems to me to render the following conclusions reasonable:

1. That, discounting the influence of pregnancy, the tendency to the development of varicose veins in the lower limbs is greater in men than in women.

2. That the disease for the most part arises from congenital and often hereditary defect or other abnormality in the venous apparatus, there being no evidence to show that a vein originally perfect (excepting perhaps the long saphena) ever becomes varicose before middle age, in the absence of such obvious causes as those previously referred to.

3. That two distinct classes of the disease exist—one beginning in the deep veins, and subsequently involving the superficial; the other affecting the superficial veins only, usually the long saphena and its radicles, and being confined almost entirely to tall subjects.

4. That the large mass of varicose veins in the lower part of the thigh, often associated with a globular varix at the saphenous opening, may in many cases, although apparently connected with the long saphena, be independent of it, being fed for the most part by veins coming through the fascia from the deeper parts of the limb, a point worthy of consideration in the treatment of these cases, as I propose to show in a future lecture.

ORIGINAL ABSTRACTS.

REPORT ON INTESTINAL SURGERY TO THE SCIENTIFIC GRANTS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION. By Frederick B. Jessett, F.R.C.S., England. From the *British Medical Journal.*

The author based his paper upon his clinical experience and also upon an experimental investigation into the operative procedures suggested by Dr. Senn. Mode of operating:

GASTRO-ENTEROSTOMY AND JEJUNO-ILEOSTOMY are performed identically in the same way by means of decalcified bone plates. He has his bone plates made of uniform dimensions, namely, two and a-half inches long by one inch wide and one-quarter inch thick. They have an oval opening in the centre three-quarter inches long by one-half inch in width. When decalcified, these plates can be cut to the size required at the time of the operation. To decalcify, place them in ten per cent. solution of strong hydrochloric acid and allow them to remain in this until they are quite soft and pliable; the solution should be changed every second day, and the plates are generally thoroughly decalcified by the end of a week. Then wash them and allow them to stay in water several hours to get rid of the superfluous acid, and finally preserve them in rectified spirit. An hour before using them place them in a twenty per cent. solution of carbolic acid. Four holes must be drilled in them, close to the central oval opening, one on either side, and one at each end. Through each of these openings pass a thread at least twelve inches long, of No. 1 chromocised catgut or Chinese silk, each armed with a fine sewing needle, and fasten to a circular thread at the back of the same material, which is made a trifle larger than the oval opening.

GASTRO-ENTEROSTOMY. To perform this operation, make an opening some three inches long in the middle line of the abdomen between the eusiform cartilage and umbilicus and push aside the omentum. A piece of jejunum, as near to its origin as practicable, is drawn into the wound and held by an assistant, and a portion of the stomach, about two inches from the greater curvature and as near the pylorus as possible, is also drawn into the wound. He then passes through the mesentery two pieces of india rubber tubing, about four inches apart, one on either side of the portion of gut to be opened, and after this has been emptied of its contents by gently squeezing it, he fastens the rubber tubing sufficiently tightly to prevent the contents passing. Sponges are now packed around the wound to catch any contents which might escape on opening the gut. An opening about an inch long is then made in a longitudinal direction into the convex surface of the jejunum and one of the bone plates slipped in; the needles of the two lateral threads are then passed through all the coats of the bowel close to the cut edge, and unthreaded, the two end threads being brought out at either end of the wound in the gut. These threads are then given to an assistant to hold, while the surgeon makes another incision into the stomach parallel to the greater curvature and introduces the bone plate into the stomach in the same way. The two openings are next accurately adapted to each other and the bone plates held firmly in position by an assistant while the surgeon ties the corresponding threads of either plate tightly. Should the ends of the bone plate be found tilted it is wise to introduce a Lembert suture at each end, but this is not always necessary. The parts are now sponged off and dropped back into the abdominal cavity, the toilet of the omentum attended to, and the abdominal wound closed in the usual way. The operation can easily be performed in from fifteen to twenty minutes.

JEJUNO-ILEOSTOMY. This operation is performed exactly as the above if it is not desired to remove any part of the gut, but simply to make an artificial communication between a portion of intestine above an obstruction and another portion below. If it should be deemed necessary to excise a portion of the intestine, the bowel should be cut directly across with scissors after the above named steps had been taken, and a V-shaped piece of mesentery also removed. All bleeding points being secured with fine catgut ligatures, the two ends of each portion of the bowel are to be invaginated into themselves, and, when invaginated to the extent of an inch, the serous and muscular coats of each are stitched together with a continuous catgut or Chinese silk suture. The two ends of the gut are next placed parallel to each other, with their convex surfaces in apposition. It is important that the two portions of intestine are applied end on, so as not to interfere with the peristaltic action of the bowels. An opening about an inch long is now made longitudinally in each portion of the gut on its convex surface and the bone plates passed in and secured in the same manner as in gastro-enterostomy. The divided mesentery is united by a few stitches of catgut. This operation can easily be performed in twenty minutes.

CIRCULAR ENTERORRHAPHY. In this operation the proximal portion of the divided gut is invaginated into the distal end, and sutures are passed through all the coats of the intestines. Sometimes the upper end of the bowel with a soft, pliable, india rubber band which is cut at the time of the operation and formed into a ring by fastening the ends together with catgut sutures. The ring is pushed into the lumen of the proximal end of the gut (which it should fit accurately) and is to be fastened to its lower end by a continuous catgut suture which prevents the bulging of the mucuous membrane. Two chromicised catgut sutures about eighteen or twenty-four inches long, are armed at each end with an ordinary sewing needle. The needles are now passed from within outwards through the upper portion of the rubber ring and all the coats of the intestine, the posterior ones on either side of the mesentery, and the anterior ones at equal distances apart through the convex surfaces of the bowel. The gut above and below the seat of operation is compressed to prevent the passing of its contents. The needles are next passed through the peritoneal and muscular coats of the lower portion of the intestine at corresponding points about one-third or one-half inch from the cut edge. An assistant makes gentle traction on the threads while the operator manipulates the two cut ends of the gut so that the upper is invaginated into the lower. Care must be taken that the margins of the lower end are turned completely and evenly in so that the serous portion of the two ends be in contact. After the upper portion of the gut is completely invaginated, the operator proceeds to tie the sutures with sufficient firmness to prevent disinvagination. The divided mesentery is next fastened with a few interrupted catgut sutures, and great care should be paid to the mesenteric attachment of the gut at the point of operation, and it is well to place a Czerny-Lembert suture on either side of it. In a few days the rubber ring is detached, and passed *per anum*. The success of this operation can be greatly increased by applying either an omental flap or an omental graft around the seat of operation.

ILEO-COLOSTOMY. This operation can be accomplished either by approximation plates, as in jejuno-ileostomy, or by the following methods:

The lower end of the ileum is fixed in the same manner as the upper portion of intestine in circular enterorrhaphy, then a slit an inch in length, or sufficiently long to allow the portion of intestine to be implunted, is made on the convex surface of the ascending colon. The needles of the sutures connected with the ileum are then passed through the peritoneal and muscular coats of the colon at either end of the opening and the ileum inserted into the slit. The two sutures are firmly tied to prevent the bowel slipping out, and it is well to introduce two lateral Czerny-Lembert sutures, one on each side, between the ileum and colon.

Analysis of Experiments.

Four cases of gastro-enterostomy by means of decalcified bone plates by Dr. Senn gave three recoveries and one death—due to hæmorrhage from omentus flap—and two done by the author gave two recoveries: death rate, 16.6 per cent.

Seven cases of jejuno-ileostomy by Czerny-Lembert sutures done by Dr. Senn gave five deaths: death-rate, 71.5 per cent. Eight cases done by Dr. Senn by means of approximation plates gave seven, and five by the author five recoveries: death-rate, 7.69 per cent.

In enterorrhaphy by invagination, which is a more difficult operation, the use of an omental flap or graft is an important item in se curing success. Four cases without flap or graft gave three deaths: death-rate, 75.0 per cent. Twelve with flap gave three deaths: death-rate, 25.0 per cent.

Nine cases of ileo-colostomy by implantation gives two deaths: death-rate, 22.2 per cent., while seven cases of lateral apposition by Czerny-Lembert sutures gave two deaths: death-rate, 28 per cent., and three cases of apposition with approximation plates gave one death: death rate, 33.3 per cent.

Now compare these results with those from similar operations on the human being. Reichel has collected 121 cases of resection of the bowel in which the ends were united by Czerny-Lembert sutures with a mortality of 48 per cent. Ill has reported forty seven cases with mortality of 53.1 per cent., and Weir has reported thirty-three cases with mortality of 51.5 per cent. Curtis repored fifteen cases in which an artificial anus formed with mortality of 66.6 per cent., and forty-five cases in which a portion of the gut was resected and the ends sutured, with a mortality of 86.6 per cent.

Now let us consider the indications for these operations. Gastro-enterostomy should be done for an obstruction at either the pylorus, the duodenum, or upper part of the jejunum, but the most important indications are cancer or stricture of the pylorus. Jejuno-ileostomy and enterorrhaphy by invagination are applicable to cases of obstruction which necessitate the excision of a portion of small intestine either for gangrene of the gut, direct strangulation, fæcal fistula, or simple stricture, or stricture due to epithelioma. The author thinks there are few cases in which it is justifiable to form an artificial anus.

Of the two operations jejuno-ileostomy is generally to be preferred, because in obstructions of long standing the upper portion is often so dilated that it cannot be invaginated in the lower, and where the intestines are matted together by adhesions it is not necessary to separate them, thus avoiding loss of time and a dangerous procedure. Ileo-colostomy is likely to be especially useful in irreducible intussusception and cancer of the colon.

CONCLUSIONS.

1. Gastro-enterostomy, jejuno-ileostomy, and ileo-colostomy should always be performed by lateral apposition by approximation with decalcified bone-plates.
2. In complete division of the bowel, circular enterorrhaphy is not to be recommended, but the ends should be closed by invagination, and the continuity of the canal established by means of lateral apposition and approximation plates.
3. An artificial anus should never be formed unless it be impossible to perform one of the above operations.
4. Ileo-colostomy or ileo-rectostomy should always be done in irreducible intussusception in cancer of the colon.
5. Omental grafts or flaps should always be used when circular enterorrhaphy is done.

ANTISEPTIC MIDWIFERY. From the *Journal of the Amer. Med. Assoc.*

In the August number of the *American Journal of Medical Sciences*, Dr. Garrigues, of New York, makes special reference to the use of corrosive sublimate and creolin in obstetric practice. He can cite twenty-two cases of fatal poisoning from corrosive sublimate, and he is confident that too strong a solution was used in the majority of cases. He recommends a solution of 1-5000. The symptoms of poisoning are as follows: Thirst, foul breath, metallic taste, swelling of the gums, ulceration of mouth and tonsils, soreness of teeth and sometimes salivation, vomiting, abdominal pain, tenesmus, profuse stinking of the bloody diarrhœa, marked dimunition in amount of urine which may contain albumen and hyaline or granular casts, sometimes sweating with itching of skin, restlessness and insomnia, then drowsiness, and finally delirium and collapse, and a weak and rapid pulse. These symptoms have occurred after a douche of 1-3000, or even 1-4000 solution of bichloride. As second only to bichloride as an antiseptic is creolin, which is a black fluid, resembling coal tar. It forms an emulsion with water in strength up to 12 per cent; a 5 per cent. solution causes some smarting, while a solution of ½ to 2 per cent. strength is well borne by mucous surfaces. It is a powerful hæmostatic, little poisonous, and makes all surfaces slippery, properties which especially recommends it in obstetric practice.

THE FATALITY OF CARDIAC INJURIES. By H. A. Hare, M.D.,(Univ. of Pa.). From the *Medical and Surgical Reporter*, June 22d, and August 10th.

The question as to how long a human being can live after an injury to the heart is very important from a medico-legal aspect. The author gives the histories of two cases, in one of which death took place on the 37th day from rupture caused by active exercise (the rupture taking place where the left ventricle, about three and a-half centimeters from the apex, had been deeply wounded), and in the other, death occurred on the 22d day, as a result of the patient becoming much enraged because his discharge from the hospital was refused. Fisher has collected 452 cases of injury to the heart and pericardium; 72 recovered, 276 died in from one hour to nine months, and 104 died immediately. Of the 72 cases which recovered 10 were punctured wounds, 43 incised, 12 gunshot, and 7 lacerated; 50 were wounds of the heart, and 22 of the pericardium. Purple records 42 cases of wound of the heart in which death did not occur immediately. Ferrus records a case in which the patient lived 21 days with the heart transfixed with a skewer. Heil records a case in which the patient survived a year and died of another disease, the post-mortem disclosing a cicatrix in the walls of the aorta. In the *American Journal of Medical Sciences*, July, 1861, a case is recorded in which a bullet was imbedded in the heart for 20 years. Ollivier and Lawson have collected 29 cases of penetrating wounds of the heart, of which only two died within 48 hours; the rest died in from 4 to 28 days.

These observations show that wound of the heart is not necessarily fatal, and that the cause of death is hæmorrhage or an involvement of the nervous ganglia of the heart.

The author then gives the results of ten experiments on dogs, from which he draws the following conclusions:

1. There are three ways in which death may occur in case of heart wounds: (*a*) By hæmorrhage from the heart cavities; (*b*) By hæmorrhage from the heart muscle itself; (*c*) By injury to the co-ordinating centre of Kronecker and Schmerz, which is located above the lower limit of the upper third of the ventricular septum.

2. The lethal result of a heart wound depends largely upon the rapidity with which a hæmostatic clot is formed in the opening.

3. Heart wounds heal by the formation of hæmorrhogic exudate, which plugs the leaky opening and permits repair.

4. Most important of all, we learn that cardiac wounds, however severe, are not necessarily fatal, simply because they are heart wounds. There are other causes which may bring about death, chief among which are pericarditis, cardiac myositis and endocarditis; while a sequence even more rapid may be embolism, or heart clot.

THE PROGNOSIS IN HEART DISEASE. By Dr. Leyden. From the Berlin letter in the *British Medical Journal*, May 25th, and June 29th.

Professor Leyden thinks this an opportune time for discussing this question, because of the marked progress which has been made in the study of diseases of the heart. This advance is due to the emancipation of observers from purely physical methods, which should not be undervalued, but on which reliance was formerly too exclusively placed. The present clinical method is to take into account all local and general symptoms in addition to physical diagnotic measures. Treatment had also been improved in the use of more certain drugs, but especially in dietetic and mechanical management.

Until a short time ago the prognosis of heart disease was looked upon as extremely bad, but now a more hopeful outlook is taken. That gloomy prognosis seemed to be confirmed by the fact that persons with heart disease often died suddenly, and were, therefore, never safe at any moment; but closer examination has shown that sudden death in chronic heart affections is very rare, except in the case of aortic regurgitation and true auginia pectoris, and even in these cases life may be prolonged many years. Sudden death in other forms of valvular inadequacy was comparatively rare; in mitral incompetence it occurred in only about 2 per cent. of the cases.

Further observations on prognosis may be grouped under three heads: (1) with reference to general disposition and circumstances of life; (2) with reference to special groups of cardiac affections; (3) with reference to particular physical and physiologico-pathological symptoms.

Under the first head is to be considered: (*a*) age; young children bear heart disease very badly, adolescence and young adult life have a better prognosis; old age has also arterial degeneration, which has a progressive tendency; (*b*) sex; because a man is more apt to lead a more active life and is more apt to have anterio-sclerosis than a woman, and the female character is better adapted to bear troubles; (*c*) circumstances which surround the patient; hard labor being the most dangerous to a diseased heart; and even mental worry and emotion often aggravates the condition. A further point in the possibility of treatment and of re-action to indications, of which, digitalis is the most important.

From a diagnostic point of view three causes of heart affections have to be distinguished: 1. Organic defect or disease; 2. Disease of the heart muscle; 3. Valvular incompetence.

1. With regard to the first class, the question to be settled is, whether the disease be organic or not, for merely functional affections have a much better prognosis; but even these are occasionally attended, especially in elderly people, with evil consequences, and even sudden death has been known to occur from fright, in persons with functional cardiac disease. We may consider the disease inorganic if an accurate physical examination reveals no abnormality, though there

are two exceptions to this rule; (*a*) murmurs, almost always systolic in time and loudest at the apex, may be heard in cases of inorganic disease; (*b*) on the other hand, there may be deep organic disease without any abnormality, whatever, discoverable by physical examination. These circumstances render the diagnosis and prognosis of any particular case difficult. Angina pectoris is very important in this connection. There are three principal forms of this disease; (*a*) angina pectoris vera depending on disease of the coronary arteries; (*b*) angina pectoris symptomatica, which is occasionally met with in all forms of heart disease; and, (*c*) angina pectoris nervosa. The first and third of these give no physical sign, but are of very different importance. The organic form is apt to occur in old people, especially of the male sex; the nervous form in young people, especially the female sex. Dilatation may occur in Basedow's disease, but the prognosis is not unfavorable in proportion to the severity of the symptoms. Not much is known in regard to the heart disease, which is associated with disease of the spinal cord.

2. Diseases of the myocardium—if those lesions of the heart produced by valvular incompetency are included under this head—constitute perhaps the most important point of the whole subject. The diagnosis is difficult, and those which can be diagnosed by physical signs may be arranged in three groups, hypertrophy, dilatation, and want of power or weakness of the heart. The prognosis depends on the danger which the structural changes entail, and on their amenability to treatment. Hypertrophy is not a disease and needs no treatment. It is the expression or consequence of disease in the arterial system or in the kidneys. The prognosis depends on the primary disease. There may be weak action of the heart in spite of the presence of hypertrophy. Dilatation is one of the most important conditions of the heart from the point of prognosis. It has a less favorable prognosis than hypertrophy. There are important differences in etiology as well as prognosis in different cases. Dilatation of the right heart may develop as well as disappear suddenly, and is of less importance than dilatation of the left heart. Dilatations of the left ventricle are of the greatest importance, though even these, especially if the result of acute diseases, have been cured in some cases. The slighter forms reveal themselves only by "galloping" sounds; in more advanced cases the apex beat is displaced. All these dilatations, even that of the left ventricle following overstrain, are susceptible of a cure, but they are not free from danger or always curable. In individual cases the prognosis depends on the degree of dilatation, the nature of the primary disease, and the amount of compensatory change. Slowly developed dilatation has a less favorable prognosis than when rapidly developed. An attempt may be made to improve the efficiency of the heart muscle in cases of dilatation depending on a progressive process, but the success is gradually only temporary. Oertel's dietetico-mechanical and Zander's gymnastic system may give better results than the treatment heretofore employed. Weakness of the heart's action has different causes, and

therefore different prognosis. Acute weakness in febrile diseases and chronic weakness from valvular incompetency are unfavorable. The prognosis of fatty degeneration is always bad.

3. Some cases of valvular insufficiency—especially recent mitral which has come on with coma—recover. When cases of aortic insufficiency sometimes recover, though an inference as to cure can be drawn from a disappearance of a diastolic murmur. Practitioners are not agreed as to the conclusion to come to as to the prognosis of aortic insufficiency in relation to marriage, life insurance, etc. If due to arterio-sclerosis the prognosis is bad. If there be no arterio-sclerosis and a heart-sound can be heard besides the diastolic murmur, the defect can be better born; also the degree of hypertrophy is important. Simple mitral inadequacy has a better prognosis. The loudness of the murmur is no guide. The underlying disease is the important matter. If this is progressive, the prognosis is bad. It is comparatively good when it is consecutive to acute diseases, but in the case of rheumatism both it and the endocarditis are apt to recur. Robust, well-nourished persons in good circumstances bear heart trouble better than others, and, on the whole, systolic murmurs have a better prognosis than diastolic. Only systolic murmurs with an arterio-sclerosis basis are of serious import.

Arythmia is often habitual and of no importance. On the other hand, delirium cordis and tremor cordis are always suspicious. In fever a pulse of 120 is suspicious, and only children suffering from acute exanthemata can tolerate a higher pulse rate for any length of time without injury. Slowness of the pulse is not of itself suspicious, though it is often a sign of weakness and indication for strengthening treatment, and a contra-indication of digitalis. Permanent slowness, when there is arterio-sclerosis of the coronary arteries, is always risky, and sudden death frequently occurs under these circumstances.

TREATMENT OF FRACTURES OF THE NECK OF THE FEMUR BY IMMEDIATE REDUCTION AND PERMANENT FIXATION. By N. Senn, M.D., Ph.D., of Milwaukee, Wis. From the *Journal of the American Medical Association.*

The treatment as well as the diagnosis of fracture of the neck of the femur is attended with many difficulties and dangers. The accident generally occurs in the aged, whose tissues do not repair quickly, moreover, the anatomical peculiarities at the seat of fracture are calculated to retard if not prevent the production of callus. It is time to give up the idea which has been taught for centuries that bony union is impossible in intracapsular fracture, for experience and experimental research have shown that the proximal fragment is not only capable of retaining its vitality, but if kept in accurate opposition with the other fragments, it aids in producing the callus. He has collected fifty-four cases of bony union after intracapsular fracture of the neck of the femur.

Twenty-three artificial fractures in animals, treated by the expectant plan, or simple plaster-of-Paris dressing, gave non-union in every case. Eight cases in which the fragments were held in apposition by an aseptic iron, bone, or ivory nail gave bony union or union by an exceedingly short, fibrous ligament in six, the other two suppurating.

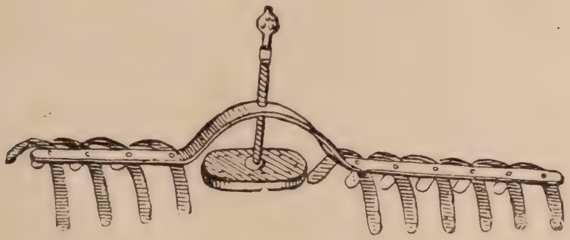
In treating fractures there are two cardinal points: Firstly, to bring the fractured surfaces into accurate couptation as soon as possible after the accident, and, secondly, to maintain uninterrupted approximation. It is evident that the length of time required to secure union is greatly modified by the width of the intervening space, yet it is strange that extensive and imperfect immobilization are still the customary treatment.

SYMPTOMS AND DIAGNOSIS OF FRACTURE OF THE NECK OF THE FEMUR.

It is not necessary to make a distinction between intra- and extra-capsular fracture of the neck. Displacement is due either to the fracturing force, muscular contraction, or simple gravity. Incomplete fracture of the lower portion of the neck gives rise to slight adduction but no shortening of the limb or change of position of trochanter major. Incomplete fracture of posterior portion of the neck would cause the posterior margin of the trochanter major to be less prominent than the anterior, but would cause no shortening. Incomplete fracture of anterior portion would cause deformity in the opposite direction. In all incomplete fractures the trochanter major corresponds to the Roser-Nélaton line. In complete but impacted fracture the displacement is caused entirely by the fracturing force, and is commensurate with the amount of bone tissue crushed at the seat of fracture. More or less shortening is always present, the upper margin of the trochanter major is above the level of Roser-Nélaton's line, the outer surface of the trochanter is less prominent than on the opposite side. In complete fractures without impaction the displacements are due to active and passive causes. There is shortening and outward rotation.

Method of Examination.—The greatest care is necessary. Al clothing below the chest must be removed, and the patient placed upon an even, smooth, unyielding surface. Inspection reveals the presence or absence of a tissue, and suggests the direction of the fracturing force. Strong outward rotation, dislocation of the hip being excluded, indicates fracture, and there is often a fullness in the groin on the fractured side. More swelling is present in extra- than in intra-capsular fracture. Careful measurement gives the most trustworthy information. It is positively harmful to search for crepitus, mobility, new point of motion, etc. Careless handling often does a great deal of harm. It is more necessary to give an anæsthetic for a thorough examination. Our diagnosis should depend on the presence or absence of three most important symptoms—position of the trochanter major, shortening and eversion.

Treatment—Is to meet two indications: 1. Immediate reduction; 2. Permanent fixation. In impacted fracture no attempt should be made to correct deformities. In all intra-capsular fractures union takes place exclusively from the immediate callus. The time required for bony union to take place in fracture of the neck of the femur is unusually long, and retention measures should not be removed for at least eighty to one hundred days. In impacted fracture the object should be to provide the mutual penetration until restoration of the continuity of the bone is obtained. In non-impacted fractures there should be immediate reduction and permanent fixation. This latter can be effected best by the following method: The patient should be dressed in well-fitting drawers and a thin pair of stockings. The fractured limb is encased in a plaster-of-Paris dressing as far as the middle of the thigh, when the patient should be placed in the erect position, standing on his sound leg on a stool. Our assistant supports the injured limb, and makes gentle traction, if necessary, to restore the limb to the normal length. In applying the bandages leave a fenestrum over the seat of the fracture large enough for a pad. The plaster is also to include the other limb as far as the knee, and the whole pelvis. A splint, made of iron, with a pad, which is connected with a screw, is incorporated in the plaster.



Lateral presssure can be applied by means of this pad over the trochanter major. As soon as the plaster has hardened, the patient can be laid on a hard, level mattress, and the foot held in the straight position until lateral pressure can be applied by means of the pad and screw. Lateral pressure prevents all possible disengagement of the fragments in impacted fractures, and holds the fragments in accurate apposition in non-impacted cases. The plaster dressing becomes loose in a few days, but the lateral pressure can easily be increased by means of the screw. No other dressing is necessary. At the end of eighty or one hundred days remove the dressing and practice artificial motion, but do not allow the patient to use it until the end of the fourth or sixth month.

CLINICAL RECORDS.

THE TREATMENT OF PELVIC INFLAMMATIONS. Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Massachusetts Medical Society, December 12, 1888. By M. Rosenwasser, M.D., of Cleveland, Ohio.

In the management of cases of chronic pelvic inflammation the accurate diagnosis is a highly essential element, without which the practitioner is entirely at a loss to know what to do and what to leave undone. The differentiation between the various conditions apparently identical to the touch requires a careful review of the history and symptoms, and experienced tactile sense and frequently repeated examinations at various intervals. If a careful examination were made under anæsthesia, in the exaggerated lithotomy position, whenever the diagnosis was not sufficiently clear, many false conclusions could be eliminated. There would then be fewer cases of pelvic exudations treated as uterine displacements by the use of the sound and pessary; the number of uterine fibroids, so gracefully and rapidly dispersed by electrolysis would in a degree diminish, and pelvic cellulitis would be relegated to its proper place in pathology as a phlegmonous inflammation.

If there is any disease in which a difference in treatment based on the social condition of the patient is allowable, it is in these pelvic troubles. The washwoman, the cook, the shop girl, the seamstress, in short, women dependent for support on their own earnings, will consent to any operative proceeding which promises them speedy relief, and the early resumption of the work which alone protects them against a pauper's lot. In these instances the early operation is a boon, and the long-drawn-out treatment under adverse circumstances, an unwarranted makeshift. On the other hand, patients whose resources enable them to carry out strictly the demands of a palliative treatment, ought to be made acquainted with this alternative before counselling radical measures, except where such measures are vitally indicated. While many of this class of patients are rendered comfortable from time to time by palliative treatment, and an exceptionally few may be permanently cured, it is to be regretted that some authors, through reports of incomplete cases, mislead the practitioner into the belief that the majority of such cases are curable without resort to surgical interference; that the hot douche, the supporting tampon, the application of iodine, and especially the use of galvanism, are the means by which the congestions are relieved, the adhesions softened and finally absorbed, the displacement rendered accessible to correction, in fact, the patient completely restored to health.

My own experience does not fully agree with this roseate view. The following cases, whose histories will be alluded to in outline only, are without doubt representative of numerous similar cases under the care of other physicians. They have one characteristic in common, and that is, their long duration, which renders them so much the more typical of the class now under discussion.

Case I.—Age 30 years. Married seven years. Mother of one child, æt 6 years. Consulted me a few months after confinement. Complained of nervous disturbances, severe backache and great weakness, partly due to semi-monthly recurrent menorrhagia. Examination revealed a subinvoluted, retroverted uterus with chronic endometritis. The application of iodized phenol and the retention of the uterus in its proper position by a hard rubber pessary relieved the patient. In an unguarded moment, a brood of bacteria found access into the pelvis, causing a subacute pelvic peritonitis. When the patient recovered after an illness lasting four months, we (Dr. G. C. E. Weber being my consultant) found retroverted uterus bound by adhesion, and the ovaries large and exceedingly tender. After the uterus had been freed and replaced, the shortened utero-sacral ligaments could be felt as sharp, rigid bands, raising the vaginal vault in corresponding folds. The continuous traction and its reflex results not yielding as rapidly as the patient had hoped, she consulted Dr. T. G. Thomas, of New York, and remained at his private hospital for six weeks, where she underwent some local but mainly general constitutional treatment. She returned improved, but still ailing; she finally became pregnant, and was confined last July. She is now in better health, but is still wearing a pessary, without which she is miserable, and is not yet cured. This being a case of chronic ovaritis with pelvic adhesions, of right belongs to what might be called the border-line between limited and general pelvic peritonitis, and represents the most satisfactory result obtainable by patient, non-surgical therapeutics.

Case II.—Age 33 years. Married. Mother of three children, last being æt. 4 years. Was in good health until three years ago. Gonorrhœal infection progressively traceable from urethra and vagina to uterus and tubes, having caused a moderate pelvic peritonitis. Six weeks after recovery from acute symptoms, examination reveals, besides enlarged and tender ovaries, the presence of a round, smooth, fluctuating movable tumor of the size of a small orange, not specially tender, occupying the right side of the pelvis; examining a few days later only the thickened relaxed walls of the sac formerly filled with fluid could be felt, with increased sensitiveness of the posterior surface and fundus of the uterus. There was at no time after subsidence of the peritonitis any vaginal or uterine discharge, except her normal and moderate menstrual flow; nor was there any elevation of temperature. After the lapse of a few weeks, the tumor would refill and disappear as before, leaving some sensitiveness posterior to the uterus as high as the fundus. Occasionally a similar tumor would form and vanish on the left side. These recurrences were not connected with the menstrual function. Dr. Weber, consultant in this case also, on one occasion accidentally burst the sac by too strong pressure, but no harm followed. There is no room for doubt that we have here an unique condition of irregular, alternating hydrosalpinx, which discharges its contents into the retro-uterine pouch. The fluid, not acrid enough to inflame, but only to irritate, gradually distends the occluded or highly constricted tube, and by the continually increasing pressure forces its way out either through a narrow angular canal or by rupture at some weak spot, which then is repaired, to be again broken when the sac is filled. The patient is still under observation, and occasionally takes to her bed when she feels a new rupture has occurred. She has not been pregnant since her sickness, nor is she likely to be. Whether she will ultimately get well, or at some period require surgical assistance in case of suddenly developing peritonitis, time will tell.

Case III.—Age 30. Married seven years. Sterile. Menstruation generally profuse. Copious leucorrhœa. Suspected infection. Three years ago, while under another physician's care, she took a severe chill; pelvic peritonitis developed, with formation of abscess in the left side of the pelvis in the course of a few weeks. The abscess burst into the bladder; before the abscess wall had collapsed Dr. Dudley P. Allen, consultant, made a counter opening from the vagina, and thus drained the abscess, which finally healed after a tedious and very painful illness. The patient has been about for a year, but is still a sufferer. There is quite a bunch of induration to the right of the uterus, besides the retracted cicatrix on the left.

Case IV.—Age 45. Married twenty-three years. Sterile. Menstruation irregular, at long intervals. For the past five years afflicted with vague pains in the pelvis and back, with considerable leucorrhœa. The uterus is enlarged, the vaginal vault tender on pressure, but no distinct tumor can be felt. Being otherwise a sufferer from chronic congestion of the liver, she has not laid much stress by her pelvic symptoms. Two years ago she was suddenly seized with violent pains, beginning in the pelvis and spreading rapidly over the entire abdomen. After recovering from the severe general peritonitis of three weeks duration, a large, hard, sensitive mass filled the retro-uterine space. Several weeks later, the patient found she was passing large quantities of offensive purulent material with each defecation. From this time forward she continued improving, but was still far from well. She made a trip to Germany with a letter to Prof. Aug. Martin, of Berlin, submitting the case to him for operation. In his reply he confirmed the presence of pyosalpinx with communication into the bowel, but had decided first to try the effect of curretting the uterus before undertaking abdominal section. The patient had improved so decidedly upon that treatment that he discharged her as cured. On her return I found her much improved, but the mass posterior to the uterus had not disappeared. During the past Summer she was on several occasions compelled to remain in bed for days, once for a fortnight, when the pelvic mass had become tender, and had rendered her unfit to be about. There has been no discharge of pus from the bowel during the past few months.

The last two cases have had a mixed treatment. The former required surgical interference to save her life, for I am convinced she would have died without drainage. I cannot understand the principle underlying Martin's treatment of the latter case. It was only palliative; for he could not expect the diseased tube to become absorbed or permanently drained, nor would the expected menopause have any influence on a pyosalpinx.

I now quote from E. H. Grandin's citation of Mundé, who completes his history of a case of pelvic peritonitis in this wise:

"As soon as she was able to come to my office, I recommended the galvanism, and after about a month's treatment she was as well as ever, and was discharged last March, wearing a small, soft-rubber, Albert Smith pessary, which she thought gave her some support in walking. I gave her directions about the continuance of the galvanism, and have not heard from her since. Hence, I infer that she is doing well, as she was of the kind of patients who would be sure to let me know if my treatment had not proved effectual."

This to justify my assertion that incomplete cases are wrongfully reported as cured.

The results already attained by men prominent in the surgery of the pelvis warrant the belief that early operations in pyosalpinx will become the established rule; that hæmato- and hydro-salpinx must be treated according to the individual indications, expectantly or by removal, if peritonitis repeatedly threatens life or seriously impairs health. When we shall have become as familiar with the after-histories of abdominal sections for ovaritis and pelvic adhesions as we are with the natural history of this variety of pelvic peritonitis, it may become possible to differentiate cases fit for operation from those unsuitable. Such cases are too often discharged from hospitals and completely lost sight of, when it is of the utmost importance to know what benefit finally was resultant from an operation not yet fully conceded to be justifiable.

PROCEEDINGS OF SOCIETIES.

THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

OFFICIAL REPORT.

Meeting of Friday, June 7, 1889.

The President, THEOPHILUS PARVIN, M.D., in the Chair.

Dr. Wm. Goodell reported the following history of a case of

EXTRA-UTERINE FETATION,

And exhibited the specimen:

The patient had been married for a number of years without conceiving. Her catamenia had been regular up to the time; when they ceased for nearly seven weeks and morning sickness set in. The next monthly period was free for a few hours and then merely a show of blood which lasted several days. During this dribble severe intercostal pains, lasting two hours, followed a movement of the bowels. For several days there was great soreness of all the muscles. At irregular intervals these intercostal pains re-appeared, and were always followed by much muscular soreness. There were few pelvic pains, nothing like cramps, and Dr. Goodell was called in on account of a continuous dribble of blood which had lasted for three weeks. During this metrothaxis membranes were twice passed, which were supposed to be fragments of an early miscarriage. Dr. Goodell found an irregular tumor to the left of the womb, closely adhering to it and pushing the fundus over to the right.

In view of the history, a diagnosis of extra-uterine fœtation was made, and the operation was promptly performed three months after the cessation of the last regular monthly period. There was no appearance of old or of fresh blood in the abdominal cavity, such as is usual in many of these cases when rupture has taken place. But, of course, blood escaped during the breaking up of numerous adhesions to the rectum and the broad ligament. The specimen shows the left ovary and the corresponding tube greatly enlarged by a deposit of placental tissue. Dr. Osler, who was kind enough to examine the specimen for me, states that the chorion villi are unmistakably present. No fœtus was discovered, but it may have perished and become absorbed, or, it is possible that it may have escaped into the abdominal cavity through an opening made accidently into the sac, during the process of enucleation. So vascular was the sac that a stream of blood spurted out from this tear as if it came from a large vessel. Apart from a nervous attack of vomiting, which lasted nearly twenty-four hours, the convalescence was uninterrupted.

DISCUSSION.

Dr. J. Price: I am satisfied that Dr. Goodell's explanation of the absence of the fœtus is correct. I could cite two or three cases and an experience of my own which supports this view. Mr. Tait's first two cases made tedious recoveries, and in both he failed to find the fœtus. Some time ago I did a section with a doubtful diagnosis. Some one standing by asked me what I expected to find. I replied, "One of twelve things." I went on and removed a large adherent tube, ruptured, with the abdomen pretty well filled with clot. I then irrigated the abdomen. After using one pitcher, the water returned perfectly clear. To make the toilet thoroughly satisfactory I used the second pitcher of water, and, in finishing the second toilet, washed out a little boy. In this case I am satisfied that the peritoneum could have taken care of the fœtus by digestion, as probably occurred in Mr. Tait's cases.

Dr. Howard A. Kelly: I think that this case illustrates how readily we can make a satisfactory diagnosis, given symptoms being present. With a certain order of symptoms and signs we can, with the utmost certainty, diagnose extra-uterine pregnancy in a certain proportion of cases. In another large proportion of cases it is a matter of mere conjecture until the abdomen is opened. I operated this week on such a problematical case, one of the two possibilities being extra-uterine pregnancy. Such proved to be the condition, although no fœtus was found. I found the sac and the placenta within the ruptured tube.

In a recent book on this subject by Strahan, he unfortunately fails to notice some experiments on the disappearance of the fœtus after its expulsion into the abdominal cavity. Leopold has experimented by introducing fœtuses into the abdominal cavity of dogs. These have been digested until the period of the more distinct development of the bony tissues has been reached. After that period they have become sources of irritation, and have been cast off by suppuration.

Dr. M. Price: I do not think that a study of the cases on record will make a man perfectly satisfied that he can say when he has a case of extra-uterine pregnancy. The ablest men throughout the world have satisfactorily decided that question. They have made mistakes time and time again. They have cut for supposed extra-uterine pregnancy and found something else. They have cut for something else and found extra-uterine pregnancy. It is very difficult to decide until the abdomen is opened.

A ruptured extra-uterine pregnancy can only develop in the broad ligament. If it ruptures into the peritoneum, there is not a single case on record where, if the operation is delayed a number of days, that the fœtus has not disappeared. Hundreds of cases are on record. I have, myself, seen eight or ten where the fœtus could not be found, where the microscope positively showed the presence of extra-uterine pregnancy. Those cases that go on to development are those in which there has been first a rupture into the broad ligament, and then development up to a certain time when the child can resist the digestive action of the peritoneum.

I would ask if this woman or any other woman with extra-uterine pregnancy could be benefited by electrical treatment. There is no question in my mind that in these cases electricity has done a vast deal of harm and has aggravated symptoms already existing, and has imperilled the woman's life to a greater extent than if she had been left entirely to nature. The knife, as Dr. Goodell has used it, is the only treatment. Delay is not justifiable at any period, unless when the case comes into the hands of the surgeon the child has passed to that degree of development that warrants its being left to the period of viability. All of these cases demand operative procedure at an early period, if they come into the hands of the operator.

Dr. William Goodell: I fully agree with the remarks of those gentlemen who hold to the uselessness of electricity. I think that there is only a single class of cases of extra-uterine fœtation in which electricity might be valuable, and that is in the early weeks, before hæmorrhages have occurred. An examination of the specimen before us shows, to my mind, that hæmorrhages must have taken place in the tube, forming layers of organized clot. In such cases I do not see how it is possible for electricity to do anything but harm. In those occasional rare specimens in which the chorion has remained intact, resembling an abortion coming away without rupture, the ovum being nothing more than a delicate but shaggy bladder, with the fœtus inside, I can understand how electricity could do good by destroying the life of the fœtus. Then everything might readily become absorbed; but as we can never know positively beforehand whether or not hæmorrhage has occured, my own feelings are in favor of immediate section.

While the difficulties of diagnosis are undoubtedly very great, this need not interfere with our treatment. We find a woman suffering from certain pelvic symptoms, and we discover an extra-uterine tumor of some kind. Now, a painful pelvic tumor must be removed, whatever it is. The only change in the treatment would be to hasten on the operation, were the symptoms pointing in the direction of extra-uterine fœtation.

CHOLOCYSTORRHAPHY.

Dr. Howard A. Kelly read the report of a case of cholocystorrhaphy, followed by cholocystotomy and evacuation of one hundred and eighty-eight gall-stones, and recovery.

Operative procedures practiced upon the gall-bladder must always remain among the rarities in abdominal surgery on account of the difficulties attending correct diagnosis and the technical difficulties of treatment.

The indications for operation are also more rarely found in any intrinsic disease of the gall-bladder, but pertain rather to disease elsewhere, whether through the formation of calculi or stenosis of the common gall-duct, by which the bladder itself is transformed into a retention cyst.

And inasmuch as this is the chief characteristic of the disease, it also forms a very important factor im accounting for the failure of the operation to cure the patient of all disability, and to accomplish more than a mere technical operative success.

Technique.—Inasmuch as the operation becomes one for the evacution of the contents of the gall-bladder or common duct, the technique of the operation involves an answer to the simple question, "What is the safest method of opening the gall-bladder, and the safest after-treatment of the wound thus made?"

Under pathological conditions, the contents of the gall-bladder are often irritating, and must be carefully excluded from the peritoneum.

The plan which I adopted in the following case is applicable to a certain percentage of all cases, and will yield excellent results wherever similar anatomical conditions are found.

The steps are:

Incision through the abdominal walls at that point at which the gall-bladder or its notch in the liver are to be felt most prominently.

Suture of the gall-bladder to the margins of the incision.

Evacuation of its contents, either immediate or after the visceral and parietal peritoneal surfaces have united.

This preliminary suture of the gall-bladder to the abdominal wall, excluding the peritoneum for danger of septic influence, fixing the gall-bladder, and providing for the subsequent escape of its contents by a fistulous track, is a step in the technique, with its own technical peculiarities, of such importance that I have dignified it by the name of "Cholocystorrhaphy."

The application of the principles involved will be developed without further discussion in the account of the following case:

Frau B——, a wizened, brown-skinned little German woman, fifty years old, is the mother of a number of children, and, aside from a single attack of jaundice when thirty years of age, enjoyed good health up to twelve years ago, when she lay many weeks abed with a severe febrile attack diagnosed as typhoid fever. She noticed at the same time the appearance of a well-defined tumor in the right hypochondrium. Since this time she has always been a sufferer with abdominal pains, indigestion and constipation. The pains, although not located in any particular spot, were very definitely referred as arising from the right side.

She suffered from menorrhagia two years ago, for which I was called in consultation by Dr. A. K. Minich a year ago. After dilatation and curetting and a course of arsenic prescriptions by Dr. Minich, this disappeared, and she improved very markedly in every way.

Last January (1889) I was again called in consultation by Dr. Wintter to consider the nature of her abdominal complaint.

The lobes of a distinctly enlarged liver, also displaced downwards, 10 cm. below normal, with a gall-bladder greatly distended, elastic, and projecting far beyond its fissure, were easily detected, and the diagnosis of obstructed gall-bladder made.

I operated on the 28th of January, in the presence of Dr. Wintter, assisted by Dr. Hunter Robb. As the liver was freely movable, and the gall-bladder lay 3 cm. to the right and 4 cm. above the navel, an incision 4 cm. long was made in the linea alba. It was found to be a large, tense cyst, about 13 cm. in length. Upon palpating the rest of the abdominal viscera through the opening, I found extensive mesenteric, small intestinal and colonic adhesions, made up partly of the union of broad surfaces and partly of sharp bands, from 4 or 5 to 10 cm. in length. These were all carefully separated and broken up by the fingers used as a wedge between the broad adhesions, and bringing the sharp bands into view when they were cut. The oozing which followed this separation was but slight. The next step was to suture the gall-bladder to the abdominal wall, so as to expose a part of its surface for subsequent incision. This was done by means of a series of fine, interrupted silk sutures, about an eighth of an inch apart, introduced so as to catch up the serous and subserous coats of the bladder and the visceral peritoneum.

The completion of the operation left a small wound, at the floor of which lay exposed a part of the gall-bladder, 3 by 1½ cm. The whole operation lasted to completion ten minutes. Iodoform gauze was placed in the wound, and absorbent cotton and bandage over the whole. On the third day the dressing was removed, and the exposed bladder opened in its length by Paquelin's cautery knife. About 300 gr. of clear, sticky fluid like synovia escaped.

On the fifth day I removed one hundred and six gall-stones, of varying size, by means of a pair of small stone forceps. Three days after forty more were removed, and on the eleventh day forty-two stones more appeared. A stillicidium of fluid commenced with the opening of the bladder and lasted eighteen days, when the wound closed. The length of the gall-bladder, measured by a sound, was 11½ cm. On the twelfth day she sat up, and on the twenty-sixth day she went home. The relief following the operation was perfect. She had no more pain, recovered her appetite, and became bright and cheerful in disposition.

Dr. George E. Shoemaker reported a case of

PUERPERAL SEPTICÆMIA.

Operation not indicated. Autopsy.

Because of the interest which attaches at the present time to the question of the place of laparotomy in the treatment of post-puerperal trouble, this case is reported. It is one in which the question of operative interference was weighed and decided in the negative—correctly, as was shown by the autopsy.

B——, aged twenty-six years, Irish, having had one child, with indefinite history of after-trouble at that time, was delivered, April 23d, of a small male child before full term.

At five and one-half months she had had a free hæmorrhage from the vagina, which was stopped under another practitioner's care. Three days prior to the labor, while asleep in bed at 3:30 A. M., she was again seized with free bleeding. She sent for another practitioner, who gave ergot, and the hæmorrhage ceased. There was no pain, and the ergot did not bring on labor. Just forty-eight hours later, while again asleep in bed, another free hæmorrhage occurred, again without pain. Several hours later, or two days after the first hæmorrhage, the writer was called.

The bed-clothing, body linen and mattress were much soiled by large quantities of dried blood. The vagina contained considerable offensive clot, the os was dilated to the size of a half dollar and was occupied by clot, the pains were absent, the child living and presenting L. O. A. The margin of the placenta was easily felt posteriorly and to the right, so that, as might be expected from the history, there was partial *placenta prævia.*

Efforts to remove the septic surroundings were begun at once. The nurse in attendance, ignorant and unclean, with a suppurating skin eruption in the palm of the hand, was discharged, and a trained nurse obtained from that admirable charity, the Visiting Nurse Society. Soiled clothing was removed, a vaginal bichloride of mercury douche given, the matted pubic hair cut off, and the patient's body and hips thoroughly bathed in 1 to 1,000 sublimate solution, this being a greater strength than would have been used but for the decomposition. All this was several hours before the labor terminated, and from a time at least four hours prior to delivery, strict antisepsis was maintained by the free use of mercurials on the hands and about the patient. It was too late; the decomposed blood had poisoned the system before delivery—a clear case of ante-partum infection. Hæmorrhage did not recur, so that no measures were necessary for its arrest after the writer assumed charge of the case. It was the intention to perform vergion at once on its recurrence, as much blood had been lost and the child was weak. The labor terminated spontaneously without complications, the child being alive and the mother in fair condition, though with apparently some rise of temperature. Unfortunately, the thermometer was not used. A 1 to 4,000 bichloride of mercury hot intra-uterine injection was given immediately, but the temperature rose above 103° eight hours later; that is, too soon for post-partum infection under the circumstances. There was, however, no tenderness over the uterus, no pain, no sign of peritonitis, and no abnormal odor to the lochia, which were apparently normal. Another 1 to 4,000 bichloride injection was, however, carried into the uterus, and the treatment with quinine and whiskey begun, which lasted throughout the case. Epsom salts, ℥ss, hourly till the bowels moved disturbed the stomach, without improving the general condition later.

There was no decided change for four days; the fever reached about 103° in the afternoon, but the stomach acted well and the strength was fairly maintained. The lochia were without abnormal odor and of fairly natural appearance till the end of the second day, when the injections were stopped, to be resumed later on the appearance of slight odor. There was at no time any great tenderness about the uterus or over the abdomen, which remained soft and undistended. As the case progressed, no definite local complications appeared. There was no uræmia and no sign of mercurial poisoning; the bowels acted well. On one occasion a considerable swelling occupied the abdomen in the median line below the umbilicus. At first glance it was supposed to be the uterous distended by clot, but when light pressure by the hand was made upon it, much to the writer's surprise, the swelling at once and permanently disappeared, while at the same time there was an audible escape of gas, probably from the vagina.

From the patient's mental condition, exact information was not obtainable, and there was no opportunity to repeat the experience. Was this physometra? The pelvis was repeatedly examined, but no accumulations could be felt. There was evidently no considerable amount of necrotic material in the uterus, for the discharges did not indicate it. There were no symptoms of peritonitis at any time, and in spite of the fixed determination of the patient to die, the outlook was fair until after the fourth day. From this time till the eighth and final day the progress was downward. The temperature became 104° in the afternoons, with violent active delirium, obstinate insomnia, and profuse perspiration, especially at night. The stomach and intestines remained in fair order, but the nervous condition was very bad.

The temperature rose on the morning of the eighth and final day to 106°, and the patient died of exhaustion. No attempt at laparotomy was made, because none seemed indicated in the absence of peritonitis or any sign of definite pelvic trouble. With the utmost difficulty, permission was obtained to make an autopsy, the husband being present to see that nothing was removed.

Autopsy, twenty hours after death: rigor mortis; emaciation; abdomen very slightly distended. Abdominal cavity contained the usual amount of serum, which was pinkish red, not turbid; contained no flocculi, but simply stained muslin without leaving residue. No sign of lymph exudate or pus. Peritoneum and intestines pale and smooth, without any adhesions and without hæmorrhagic spots. Intestines not over-distended, The uterus, as large as a large fist, was distended by gas, and when compressed remained collapsed like a bag. It was pale bluish-white in color, incision showing the walls to be about one-third of an inch in thickness; the cavity empty of all fluids. A pinkish-red thin, transparent coating of mucus covered the lining membrane. This mucus was not abundant enough to flow—simply a coating. It was examined under the microscope and found to contain no pus, but to be made up largely of epithelial cells of various ages, showing very marked fatty change. The large amount of fat was remarkable. It was not extraneous, as no lubricant could be obtained for use on the hands. The left tube was of the size of the little finger, and when first touched apparently contained gas like the uterus. It collapsed with handling, but no liquid could be found in the uterine cavity which could have been squeezed from it. It was not adherent, and when delivered with the ovary through the abdominal incision and incised did not look unhealthy, and contained no fluid. The right tube was smaller, and contained no gas. It was adherent to the uterus and the right side of the pelvis by old adhesions, but was delivered with the ovary through the abdominal incision, incised, and found empty. Both ovaries were of normal size, the tubes of a bluish-pink, and pale like the other organs and the peritoneum from loss of blood. No collection of pus or any source of infection, removable or otherwise, could be found in the abdomen or pelvis. Other portions of the body were not examined, owing to the exigencies of the post mortem. There had, however, been nothing to call attention to them. The cause of death, then, was general septicæmia, with no continued source of infection near the point of original departure.

The question of the treatment of post-puerperal septic conditions by abdominal section, as suggested and practiced by Mr. Tait and others, is one of great importance. The reports of successful cases demonstrate beyond doubt that in laparotomy a new and very valuable means of combating some forms of a fatal disorder has been developed.

Just now we are in need of more definite clinical knowledge as to when the belly should and when it should not be opened. Where peritonitis persists, the profession is rapidly reaching the conclusion that laparotomy increases the patient's chances, or, if there is a distinct purulent collection, that it affords almost her only chance.

Whether pus is to be found in the peritoneum, in the tubes, or in the connective tissue, whose intercellular spaces are continuous with the lymphatic vessels, its removal, followed by drainage, is unquestionably indicated. Where the uterus itself is infected to such a degree that the local use of dull curette and antiseptic douche will not remove the source of infection, there is nothing suggested which is more promising than hysterectomy, though in practice this is likely to prove disappointing from prior general infection. It must not be forgotten, however, in these days of readiness for operation, that there are cases, such as that here reported, where there is early a general infection, not from pus, for there is none formed, nor yet from any remaining focus of infected material; and where it would be just as useless to incise the peritoneum or remove the tubes as to remove the stomach hours after a poisonous dose of atropia. There are some cases in which, if they go on long enough, abscess may form late, especially from emboli, where phlebitis exists; but the pus may lie in lung or brain, as well as in more accessible localities, and the hope of recovery does not lie in laparotomy.

What is demanded, therefore, in each case is a careful study of that case by itself, and repeated examination for foci of infected material. When these are found, they should be removed, if accessible, at the earliest possible moment, and by any safe means which will thoroughly do the work.

DISCUSSION.

Dr. William H. Parrish: The question of laparotomy for septic infection accompanying or following labor is one of great importance. Doubtless many errors have been made in not opening the abdomen, while against this is the fact that at the present stage of abdominal surgery, we should be on our guard that we do not go to the other extreme and open the abdomen in cases of septic infection following labor, when the operation is not indicated. It has so happened that in an acquaintance with the Philadelphia hospital, extending over fifteen years, I have seen a goodly number of autopsies in cases of septic infection after labor. I have seen few instances in which the autopsy showed that laparotomy would have been of any special value. Where there has been a pus accumulation without fatal general septic infection preceding it, and that pus cavity is so located that it can be opened and drained or entirely removed, the operation is a proper one. If there is reason to believe that there is an accumulation of pus in the peritoneal cavity, it will be right to open the peritoneal cavity and remove the pus, provided the woman is not in a moribund condition. There are, however, cases in which the purulent peritonitis develops very late in the history of the case. There are not a few instances in which the septic infection, as it has extended from the uterus, shows local effects in the lymphatics, and the fatal result is probably determined before the peritonitis takes on a very active form. I am sure that I have seen this occur. In an endemic in which twenty or thirty autopsies were made, we found the peritoneum in various stages of inflammation. Cases that died early showed inflammation of the lymphatics, and the formation of pus in the lymphatics, particularly of the broad ligament and uterus, with swelling of the areolar tissue and degeneration of the peritoneum. In other cases, the condition was more advanced, with the formation of lymph and flocculi and turbid fluid in the peritoneum. In other cases, where the patient lived still longer, we found a larger quantity of purulent looking fluid. I believe that if these cases had been operated on, the result would not have been favorably influenced. In fact, I think that in some the fatal result would have been promoted by operation. It requires more judgment, and I think probably more skill, to determine when the abdomen should be opened in these cases than to do the operation.

I have, in a few instances, opened the abdomen after labor, and, as I think, have thereby saved the patient. It has so happened that in all the cases in which I have opened the abdomen after labor, that the pus has been in the areolar tissue of the pelvis. These cases have recovered. I have not operated on a patient after labor who has not recovered. I do not recall a single instance of pus in the tubes. There was a limited quantity of thickened fluid, but nothing like pyosalpinx. I think that this is rare, especially in endemic septic infection.

Dr. J. M. Baldy: I agree with Dr. Parrish in regard to the difficulty of deciding which of these puerperal cases are subjects for operation and which should be let alone. At one time I thought that it was rather easy to distinguish; but as cases came one after another into my hands, I found it extremely puzzling to know what to say. If there is pus in the tube, which I found in one case, it is easy to settle the question. It is often difficult to say whether or not there is pus at all. In the vast majority of cases in which I have been asked to decide for or against operation, I have advised waiting, and all of these cases have recovered, showing that there was no pus. If you can make up your mind positively that there is pus or purulent fluid, there would be no question as to the advisability of operating. I should not wait because the woman was far gone, in the hopes of bringing her up. I think that the pus is at the bottom of the trouble, and that the only way of saving her is to stop its absorption at once, by removal. The great difficulty is to decide whether pus be present or not, and it requires caution, or we shall be led into many operations which will be unnecessary.

I think in the case of Dr. Shoemaker, that the question of operation would not have come up at all. It was not a case of peritonitis, nor were there symptoms of local trouble. From the report I can see no indications for the use of the knife. I think that this was clearly a case of absorption of ptomaines, and in such a case there would never be formation of pus.

Dr. M. Price: I have had rather an unfortunate experience with this operation. In three cases that I have had there has been persistent vomiting. For days there had been fever and quickened pulse and a well-marked chill. Upon examination there were unquestionable evidences of pelvic inflammation. In one case tubal trouble was well marked, and the uterus could be mapped out from the tubes. In this case the operation was performed on the eleventh day, after it had been determined that the woman had peritonitis. Three pints of pus poured out. The pus had burrowed up behind the kidneys on either side. The case was fatal.

The second case was one of criminal abortion, where the girl fell into Dr. Musser's hands at the last minute, and he sent her to me. Within six hours I operated and found three pints of pus. No well-marked tubal trouble could be found. All the surroundings were in a semi-gangrenous condition. The patient died.

The third case was seen a few weeks ago. The pelvis was as solid as if it had been frozen. She had a chill and the broken tea-leaf appearance of the vomit. She finally consented to an operation, and on opening her from one to two pints of pus escaped. Nothing was done but to open the belly, break up the inflammatory adhesions, wash out the cavity, and use drainage. In these cases I think that early operative procedure would have given the patients a chance for their lives. If I were to-night to see a case of septic peritonitis where there had been a chill, some distension of the bowel, a fixed condition of the uterus, I should not hesitate longer than to obtain my instruments.

Dr. J. Price: Dr. Parrish has well selected his cases; he has not made any mistake; he has operated in suitable cases, and others he has permitted to die because any operative interference would simply have hastened death. In all the cases in which we have operated, we have been able to place our fingers on something before operating. The cases reported by my brother were all dying. It is unfortunate for surgery that we should be forced to operate on a dying patient. A large number of puerperal cases have been saved. Dr. Baldy has saved two cases. I have had a number in my own practice. Dr. Bernardy has had one, and I could cite a number of other cases. In none of the cases cited by Dr. Parrish did he put his hand on anything on which to operate, and he cannot cite a single case in which he opened the abdomen when he should not have done so.

Dr. W. H. Parrish: I wish to add one word in regard to operating when the conditions seem to be fatal. I did not mean to say that I would not operate on an abscess, believing such to be present, when the patient is very ill. In one instance I removed a gallon and a-half of pus from a patient in a condition of extreme emaciation and almost ready to die. She is now well. I should hold off from operating in a case in which the blood-poisoning was so great that there was no possible hope for recovery. Where there is an encysted abscess, the patient will live a long time; but in endemic diseases with dense septic infection, the patients, even when first seen, are often so ill that exploratory incision would certainly not be a proper thing to do, inasmuch as it would add to the mortality following surgical operations and deter others from operating and other patients from being operated upon. If there is reason to believe that there is a pus cavity, I should operate if the patient was almost in extremis. Where, on the other hand, the blood-poisoning was the main trouble, I should not open the abdomen as a matter of exploration.

Dr. Joseph Hoffman: There is one point in connection with the case of Dr. Shoemaker to which I would call attention, and that is the use of the bichloride and the absence of odor. It seems to me that the absence of odor must have been due to the bichloride. The statement that there was no odor is perhaps a little too wide, inasmuch as disinfection was used persistently. It seems very evident that the case was one of general septicæmia from the preceding dirt, and that the peritoneal condition was only an incident to the general systemic poisoning. I have seen one case die from general peritonitis in which there was pus, but in which the symptoms appeared only on the eighth day, the patient succumbing on the tenth day.

The President: How do you explain the physometra.?

Dr. Geo. E. Shoemaker: I did not assert that there was no physometra. I only asked if the escape of air from the uterus or vagina could have been so explained. If there was gas it was probably the result of decomposition. There was no peritonitis at any time. When I say that there was no odor to the lochia, I mean no abnormal odor, except at the time mentioned, when there were indications for disinfection.

I would like to call attention to one difficulty in the diagnosis of post-puerperal pelvic abscess. Over a year ago I had a bad case of septicæmia in a woman who had been delivered by another gentleman. She developed on the left side of the uterus a decided sense of resistance, and a tumor apparently the size of the fist, and tender on pressure. The temperature was 105°–106°, and there were profuse sweats at night. I felt very solicitous as to whether or not there was pus. The enlargement proved to be a fecal mass, which purgatives removed in a few days. No operation was performed, and to-day there is not a healthier woman in the city.

ORIGINAL CORRESPONDENCE.

FLATONIA, TEXAS.

To GAILLARD'S MEDICAL JOURNAL.

Some days ago the following letter was received by me from a physician, and, as the class of cases he describes are growing more common here every year, to our great vexation, I give his description of the case, and my reply:

"DEAR DOCTOR: I have a patient down with an ordinary attack of malarial fever. The trouble is that he cannot take sulphate of quinine without the following bad results, and that it has no effect over the fever. It depresses his heart action very much, and produces a deep redness of the skin, which, in its turn, itches and burns so badly as to be unbearable. The quinia also renders his breathing difficult. Have tried cinchonidia and arsenious acid, but without success. To-day have given full doses of potas. bromide before each dose of the sulphate, and with the same bad result. Will be under obligations for any suggestions you may be able to offer."

[Reply.]

DR. ———,

DEAR SIR: In reply to yours of recent date will say, that these cases are among the most troublesome with which we have to deal; for years they baffled every expedient that I could think of. For the past ten years I have used the cincho-quinine with the happiest results—hardly a single case of failure from its use. It is claimed that it contains all the alkaloids of the bark. Do not know if this be true, but it breaks up the fever without any of those distressing symptoms. Only last week, in consultation in regard to a delicate nervous woman whose sufferings were similar to those you describe, the cincho-quinine was suggested. The fever had lasted for a week or more, and was relieved in twenty-four hours. The amount given was thirty grains in about four hours. In all, or nearly all these cases you will find considerable tenderness over the liver. First get your patient thoroughly under the influence of gelsemuim, and then apply a *big* fly blister over the region of the liver, and give the cincho-quinine, say in doses of fifteen grains, and repeat once in two or four hours.

I know that to some of our prominent teachers of medicine the word "blister" is like the shaking of a red rag before a mad bull; nevertheless, we country doctors use them often, and with results that we can accomplish in no other way. It has long seemed strange to me that we will keep on in the old ruts, giving sulphate of quinia, when it is so very obnoxious to the stomach.

H. A. TUTWILER, M.D.

PHARMACY AND THERAPEUTICS.

SALINES IN PERITONITIS. By G. W. Miltenberger, M.D.

As much as has been written and published upon the diseases of the puerperium, there is no subject which exerts the same fascination for the zealous and intelligent observer, and offers so wide and rich a field for thought and study as puerperal septicæmia, in the varied forms in which from time to time it is presented to us.

Its history, its etiology, its clinical manifestations, its almost limitless pathological lesions, its essential cause and nature, its contagiousness or non-contagiousness ; its terrible fatality at times and for long periods, (Prussia) exceeding the combined mortality of small-pox and cholera ; the infinite variety of its therapeutics from year to year, or from epidemic to epidemic, and the apparent or indeed actual inutility of all methods to relieve the disease, or arrest its progress, through the greater part of it recorded history ; the fact that the scourge continued throughout the civilized world, until suffering and death absolutely forced upon the profession the preventive methods which have alone stayed its ravages ; the farther fact that to its study (Semelweiss) really belonged the credit of having discovered and pointed out the new doctrine of infection, disinfection and prevention ; the prominent part which it has played in the elucidation and establishment of the microbic origin of disease, and the question still mooted, as to whether the microbe or the ptomaine which is the result of its life history, is the immediate cause of blood empoisonment, afford us at every step and stage of the process an inexhaustible field for the exercise of the highest attributes of the intelligent and conscientious physician.

The field is so wide and extensive that volumes might still be written, and days and nights of anxious toil be spent in its elucidation, and there is no single point of its history which would not require far more time than we have this evening at our disposal.

I would now ask your attention to but one single point, and that purely and entirely practical, and in connection with the most important consideration, its therapeutic management.

We all know how often the poison, whatever we believe its source, expends its influence upon the serous membranes, especially the peritoneum , so much so that by many of the most astute clinicians and most capable pathologists puerperal fever and puerperal peritonitis were considered synonymous.

We equally well know that in certain epidemics it was recorded that venessection was the only sheet anchor, and that no woman was saved without it; while in others it was equally positively asserted that every woman died when it was employed.

In others, alteratives and purgatives were relied upon, and for a time in certain continental hospitals the principal question asked by the obstetrician at his daily visit was as to the number and frequency of the evacuations during the twenty-four hours, and upon this he founded his favorable or unfavorable prognosis. Again we have the opium treatment, so ably promulgated by Alonzo Clark and apparently so logical and in many cases so satisfactory, while at the opposite end of the scale in some epidemics it has been insisted that a dose of Dover's powder cut short the disease. And now when we firmly believe in the opium treatment, when we were taught to splint, as it were, the inflamed tissues and we deemed this object logical and that its result was proved ; when, according to Clark, we gave our two grains of opium every two hours, or if this did not suffice pushed it to the point of entirely overcoming spontaneous pain, and if we could even tenderness on pressure ; when we did not hesitate to give it in enormous doses until it reduced the respiration to twelve in the minute or even lower ; there comes within the last few years that bold and fearless surgeon, who has made the field of abdominal surgery his own, with his wondrous touch, his almost marvelous operative skill and equally marvelous results—Lawson Tait—and tells us the pendulum must swing backward, that history must repeat itself, that opium in these cases of peritonitis (septic) is always injurious, and in this latter assertion he is now being rapidly supported by a larger and larger proportion of abdominal surgeons, and that we must again return to the purgative plan, by means of salines.

Fortunately my personal knowledge of septic peritonitis has been comparatively limited, but a short time before the enumeration of this new or revived doctrine, I had seen a case following abdominal operation which obstinately and fatally resisted the opium treatment although heroically pushed.

With this case impressed upon my mind, shortly after Mr. Tait's publication, I was called in consultation to see Mrs. C. with puerperal peritonitis, which for forty-eight hours had resisted opium in large doses, with quinine as an antipyretic. I told the attending physician that I had no personal experience of this mode of treatment, but thought that the circumstances fully warranted its trial. With two drachm doses of the tartrate of potash and soda every two hours, the pulse and temperature both subsided as soon as full purgation followed and convalescence was at once established. Two months later I was called to see Mrs. M. in the same condition, with the same history, and the result of treatment was identical with the former. During this time several had reported cases of like character, in which the therapeusis had been equally successful.

In this connection I may mention an interesting experience in my own person within the past two months. Having felt unwell on the 25th and 26th of March, I left home on the morning of the 27th at 9.30 A. M. feeling some pain in the right hypochondrium.

While with the first patient visited, it became aggravated, so that I hurried through my visit ; but having another patient some four or five squares distant, I started for the latter.

Before I had driven two squares, the pain became so intense, aggravated by the motion of the carriage, that I was forced to return home at once. The pain was over the region of the liver, extending over the epigastrium, intensely sharp, acute, agonizing, increased by movement, and absolutely unbearable when I attempted to take a full breath at every descent of the diaphgram. The pulse quickened and faltered, the skin was cold, respiration short and gasping, with tenderness on pressure, and a feeling of threatened syncope. It was with difficulty that I reached home and was assisted to my chamber. The impression on my mind was that it was perihepatitis.

It required two full hypodermics of morphia to ease the pain and permit me to breathe. Under advice, I took quinine every three hours, and a hypodermic of morphia was given in the evening to enable me to examine my class, which I was obliged to do, still in bed.

The following day pain was persistent, but, while resting in bed, bearable, and pulse and temperature were rising. I, however, forced myself, in the evening, to go down to the office, where I remained continuously for six hours and a half—from 7 P.M. to 1.30 A.M.; pulse during this time 120, temperature 102½° to 103°. I was now suffering worse than ever, and could hardly reach my chamber.

And now came on the most agonizing pain in my right shoulder, which prevented my lying down.

Unwilling to keep myself under the influence of opium, and having derived no benefit from the quinine, I commenced the use of the salines, two drachms of Rochelle salts every two hours, taking the first dose at 1.30 A. M., of the 29th.

After taking a full ounce, the fourth and last dose at 7.30 A. M., free serous discharges from the bowels began, and within an hour pulse went down to 108, temperature over a degree, pain abated, and convalescence was fairly established, and continued without further medication.

It was, I assure you, an interesting experience to me. We have been taught the use of opium to control that most important factor, pain, and to splint the inflamed tissues, and prevent, in this view, peristalsis. In speaking of this treatment to my professional friends, almost universally have they insisted upon this point, that the peristaltic action of the intestines could only aggravate pain and inflammation. I watched this point carefully, but with the serous discharges there was no increase of pain, and, direct my attention to it as determinedly as I could, I failed to detect by sensation any intestinal contractions. It was simply a serous hæmorrhage from the vessels of the inflamed tissues, poured from the bowels with the greatest relief, and without any consciousness of irritation whatever.

The observation and experience fully repaid me for all I had suffered.

Some days after I resumed business, I saw a case with the following history: she was a primipara, who had a normal labor; she was pale, anæmic, and seemed broken down before her confinement. After labor she had sapræmia, from which, after ordinary treatment, she recovered; but, of course, still further enfeebled, anæmic, and broken down. For four days after this her pulse and temperature were absolutely and continuously normal, and she was then permitted to leave her bed, being cautioned to make no exertion, and to be careful as to her diet; she, however, did exert herself about her room, and committed gross dietetic errors. The same evening she was seized with a severe, determined chill, followed by high fever, pulse 120 to 130, temperature 104. Vaginal antiseptic irrigations were at once resumed ; opium and quinine were given freely. Twenty-four hours later, there was no improvement, and the abdomen became tympanitic.

The following morning, about forty hours from the inception of the attack, Dr. Neal and myself found her in this condition, with the addition of irritability of stomach.

Examination revealed a pelvi-peritonitis. Now, here was a woman exhausted before labor, who had gone through an attack of sapræmia, followed after an interval of four days by localized peritonitis, now extending, and with gastric irritability, so that it was with difficulty she could take and retain medicine or nourishment. I advised the withdrawal of the opium and quinine and the disuse of the antiseptic injections, merely using hot water vaginal irrigations and the Rochelle salts as in the other cases. As soon as serous diarrhœa was established, all of her unpleasant symptoms abated and soon disappeared. In this case, she was so sensible of relief that she asked for the continuance of the drug, even after we considered it unnecessary.

It is true that the sum of my experience is small, that these cases are but few, that from them alone we would not be justified in formulating a treatment of so serious and too often so fatal a complication.

But, while I must apologize for the scarcity of my material on so important a point of therapeutics, which must ultimately be settled by amount and weight of observation and experience, I deem it the duty of every one to add his mite, however small, to the general mass, upon which the decision, whether pro or con, must at last depend.—*Maryland Medical Journal.*

SULPHONAL (M. H. Farmer).—About one o'clock on the morning of June 30th, I was called to attend Mrs. C., æt. 20 years, in her first confinement. She was a woman of vigorous constitution, never having been sick in her life. Although I had but five blocks to walk, the child was born when I reached the house. Having cared for the child and removed the after-birth, the patient appearing exceedingly nervous and irritable, I administered a fifteen-grain dose of sulphonal, and fifteen minutes later went home. Twenty-five minutes after reaching home, I was again hastily summoned by the patient's husband. I repaired to the house at once, and found her with a face as white as a sheet. Radial pulse not perceptible. Respiration eight to the minute. She was bathed in a cold, clammy sweat, and gave every indication of a dangerous collapse. I immediately examined her for hæmorrhage, but found none. She rallied in about an hour, under the persistent use of stimulants and hot applications, and has since done very well.—*Weekly Med. Rev.*

MYRTOL, A NEW ANTISEPTIC.—This antiseptic, if we may credit the statements of the *Giornale di Farmacia e di Clinica,* No. 17, 1889, is superior to any other. It is obtained by distilling essence of myrtle.

Myrtol is a colorless liquid, with a strong characteristic odor of myrtle. Its formula is C^{10} H^{16}. When given internally both the urine and the perspiration will smell of the drug, and the former will frequently assume a violet color.

According to Professor Eich, myrtol is a most efficacious antiseptic in putrid affections of the respiratory tracts. The symptoms of headache and vertigo, which so frequently follow inhalations of turpentine, were never observed to follow the similar use of myrtol; neither does it produce any irritation of the mucous membrane, and is, in this respect, therefore superior to phenic acid and creosote. The best method for administration is in capsules containing two and three-tenth grains of myrtol; one capsule to be taken every two hours.—*Journal de Med. de Paris.*

STYRONE.—Styrone has been studied for the last eleven years by Dr. Beach (*N. W. Lancet*), in the Massachusetts General Hospital. It is a compound of liquid storax and balsam of peru. Applied unmixed to a raw surface it is somewhat irritating, but in emulsion with water, liquid vaseline or olive oil, it is an agreeable dressing, a prompt deodorizer, and, in an eight-per-cent. solution, a reliable antiseptic, according to Dr. Beach, capable of completely disinfecting a foul and ulcerating surface. In the pleural or peritoneal cavities weaker solutions in water, 1-50, 1-100 or 1-200 may be safely and effectively used. In the form of a four-per-cent. spray it sometimes gives great relief in phthisis, and its action upon the cholera bacillus outside the body leads to the hope that it may prove a valuable internal remedy in cholera (*Med. Stand.*). The preparation enjoys considerable popularity and demand in Massachusetts, especially in Boston, but we think the composition as given above is not strictly in accordance with facts. Styrone as now obtained occurs in liquid and crystalline form, the latter easily deliquesent, and the process of manufacture is thus described:

By distilling fluid styrax with water, the styrol distils over. By treating the residue with carbonate soda solution the cinnamylic acid is eliminated, and washing the remaining resin with alcohol produces styracin, which is re-crystallized with ether, hot alcohol, or benzol. It forms colorless, tasteless and odorless crystals, melting point 45°, which will remain in fluid form a long time after melting. It is insoluble in water, but soluble in twenty-five parts cold or three parts hot alcohol, and in five parts ether. Through oxydation it is separated into bitter almond oil and benzoic acid, and by the action of caustic potash solution into cinnamic-alcohol (*styron*, styryl-alcohol) and cinnamylic acid.—*Hager's Pharm. Praxis, 1880.*

REVIEWS.

LECTURES ON NERVOUS DISEASES. From the Standpoint of Cerebral and Spinal Localization, and the Later Methods Employed in the Diagnosis and Treatment of these Affections. By Ambrose L. Ranney, A.M., M.D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital, etc., etc. Profusely Illustrated with Original Diagrams and Sketches in Color by the Author. Carefully Selected Wood Cuts and Reproduced Photographs of Typical Cases. Philadelphia: F. A. Davis, Publisher, 1888.

Dr. Ranney is certainly as entertaining as he is prolific, and in the present volume we have a series of lectures and some original extracts from his publications in the *New York Medical Journal*, *Medical Record*, *Archives of Medicine*, *Journal of Nervous and Mental Diseases*, *Medical News*, *Medical Bulletin*, *Medical Register*, *Harper's Monthly*, and his work on "Surgical Diagnosis." It is quite interesting, but not one of our functions, to trace the author's works from his first work on anatomy, his later practical applications of anatomical knowledge in his "Surgical Diagnosis," and his "Applied Anatomy of the Nervous System," and finally this work on Nervous Diseases which embodies all the knowledge of the other books and a good deal more. To briefly outline the plan of the book, it is as follows: First, generalizations respecting the nerve centers from the standpoint of anatomy, physiology and pathology. Next, the methods to be pursued in the clinical examination of patients. Next, diseases of the brain and its envelopes, the spinal cord and its envelopes, and functional nervous diseases. Lastly, toxic and unclassified nervous diseases and a section on electricity in medicine concluding with a glossary of neurogical terms, a bibliography and index.

The greatest feature of the book—and one in which the author has made great success as a teacher—is the manner in which the illustrations are presented and the great assistance rendered by them in elucidating the subject. Indeed it cannot be denied that the author has a wonderful ingenuity in the matter of pictorial representation. That this is overdone at times is no more than we would expect amid such a profusion of colored ink and so many colored pictures. To be more to the point, the coloring of the illustration of paralysis agitans of athetosis, of Bell's paralysis, and that of a number of others rather, detracts from than adds to the effect of the illustration.

The author lets his enthusiasm outrule the opinions of many in regard to "eyestrain" as a proximate cause in the production of functional nervous diseases. At the same time there are comparatively few men who have recognized the importance of the eyes in their relation to functional nervous diseases; so that we are rather inclined to think that an over-estimate may result in less harm than an under-estimate will do good.

The discussion of locomotor ataxia is rather less limited than we would expect in a work of this kind. The cases quoted under epilepsy, hysteria, and hystero-epilepsy, in which relief of defects in the eyes has been followed by a relief of the manifestations of these diseases, certainly warrant a careful examination of the patient's eyes in every case.

The book is nicely gotten up and must prove acceptable to a large number of readers. We commend it to the careful perusal of the profession.

ATLAS OF VENEREAL AND SKIN DISEASES: Comprising Original Contributions and Selections from the Works of Dr. M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Dr. I. Neumann, of Vienna; Drs. A. Fournier and A. Hardy; and Drs. Ricord, Cullerrier, Besiner and Vidal, of Paris; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. Edited by Prince A. Morrow, A.M., M.D., Clinical Professor of Venereal Diseases, formerly Clinical Lecturer on Dermatology, in the University of the City of New York; Surgeon to Charity Hospital, etc. New York: William Wood & Company, 1888.

(*Continued from page 626.*)

Fasciculus XIII. and XIV. complete this most excellent work. We have taken up each number in detail and there is little left for us to do except to consider the contents of the present numbers.

Fasciculus XIII. contains plates illustrative of the ovarium forms of Lupus, of Sarcoma, and of Epithelioma, and of Leprosy.

Fasciculus XIV. contains plates of Kabies, Peirculosis, Chromophytosis, Tricophytosis, and Tacus, and Eczema Marginatum. We would have expected in the body of the text, illustrations of the parasites causing parasitic diseases. The character of the illustrations is not different from that in previous numbers. The text is interesting and practical. The work, as completed, stands among the best efforts in its line, and no practitioner could go astray in getting—few can afford to be without—this interesting and beautiful work.

OUR LIBRARY TABLE.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume VII. Edited by J. Ewing Mears, M.D. Philadelphia: P. Blakiston, Son & Co. 1889.

Tne volume of the transactions of the Surgical Association contains the President's Address, by Dr. Cheever; The Early Diagnosis of Malignant Growths, by Dr. Warren; Hernia, by Dr. Mastin; Sarcoma of the Tonsil, by Dr. Cheever; The Use of the Ligature en

Masse in Abdominal Surgery, by Dr. Stimson ; Drainage and Drainage Tubes, by Dr. Weeks ; The Anti-tubercular Power of Iodoform, by Dr. Pilcher ; Digital Divulsion of the Pylorous for Cicatricial Stenosis, by Dr. Barton ; Anchylosis of the Temporo-maxillary Joint Relieved by Osteotomy of the Neck of the Inferior Maxilla, by Dr. Cabot ; Gunshot Wounds of the Intestine, by Dr. McGraw ; Successful Nephrectomy for Cancer of Right Kidney, with Remarks upon Place of Incision, by Dr. Homans ; Free Division of the Capsule of the Kidney for Nephralgia, by Dr. Tiffany ; Successful Ligation of the Primitive Carotids, by Dr. Lane ; Surgical Treatment of Gangrenous Hernia, by Dr. Richardson ; Distended Gall-bladder Simulating Floating Kidney, by Dr. Mears. Full discussions of many of these papers by the large number of distinguished surgeons present, form very interesting and important reading. The volume is for sale by the publishers.

SYPHILIS OF THE NERVOUS SYSTEM. By H. C. Wood, M.D., LL.D. 1889. Detroit, Mich.: George S. Davis.

This brochure begins the fourth series of the "Physician's Leisure Library" series. The author bases his claim to the time and thought necessary to read and appreciate this little volume upon the fact that it is a record largely of his own experience. At least it deals with the lesions of syphilis least known and the knowledge of which is extremely important. That the author has had under his personal observation and treatment nearly two thousand cases adds no little to our confidence in the value of what he has to say on the subject. The author gives a good admonition in regard to the use of mercurials and iodides. Says he: "The decision whether iodides or mercurials should be employed ought to rest upon the *symptoms of the individual case rather than upon the stage of the disease.*" The references in the work are numerous, the illustrations few and of doubtful artistic merit, the workmanship a fair sample of the series of which it is a member.

MOTHER, NURSE AND INFANT: A manual especially adapted for the guidance of mothers and monthly nurses, comprising full instruction in regard to pregnancy, preparation for childbirth and the care of mother and child and designed to impart so much knowledge of anatomy, physiology, mid-wifery and the proper use of medicines as will serve intelligently to direct the wife, mother and nurse in all emergencies. By S. P. Sackett, M.D. New York: H. Campbell Co., Publishers, 140 and 142 Nassau St., 1889.

Read the title page! Is comment necessary?

THE PERINEUM: Its Anatomy, Physiology and Methods of Restoration after Injury. By Henry O. Marcy, A.M., M.D., LL.D., Surgeon to the Private Hospital for Women, Cambridge, etc. Reprinted from Transactions of American Association of Obstetricians and Gynæcologists, September, 1888. Philadelphia: Wm. J. Dornan, Printer, 1889.

FIFTEEN CASES OF HYDROTHORAX. Fifth Series. By F. Peyre Porcher, M.D., Professor of Mathematics, Medicine, and Therapeutics, Medical College State of South Carolina.

In the preceding series of cases of hydrothorax the author restricted himself to the consideration of those in which paracentesis of the pleural cavity, the lungs, or the pericardial sac was employed. In the present series of cases he undertakes to demonstrate the unsuspected frequency of pleurisies, with effusion in this country. The paper is practical and highly interesting.

ON THE HEALING OF ASEPTIC BONE CAVITIES BY IMPLANTATION OF ANTISEPTIC DECALCIFIED BONE. By N. Senn, M.D., Ph.D., Attending Surgeon to the Milwaukee Hospital; Professor of the Principles of Surgery and Surgical Pathology in the Rush Medical College, Chicago, Illinois.

REPORT OF THE CHIEF OF THE BUREAU OF MEDICINE AND SURGERY TO THE SECRETARY OF THE NAVY, 1888.

THE SURGEON OF THE PRESENT DAY. By Dr. F. Formento, M.D. New Orleans, La.

SANITARY.

MICROBIC LIFE IN SEWER AIR,* By Alfred Carpenter, M.D. J.P.

The peripatetic world is now and then convulsed by agitations against the smells which come from openings into sewers. "Shut them up," say the most energetic and demonstrative. Sometimes this is effected; sometimes it is not. In the heated discussions which spring up in consequence of some stinking outlet, argument is useless. The loudest exclaimers often gain the day rather by the loudness of their declamation than by the correctness of their reasons.

I propose to consider the question in its bearing upon the public health in a scientific rather than in a partisan spirit.

The reasons for objecting to smells from sewers are sound enough. It has been proved *usque ad nauseam* that sewer smells do promote sickness. It is reasonable, therefore, that those who object to pay an unnecessary doctor's bill, and at the same time incur the risk of losing one of their beloved ones, should be loud in their antagonism to smells from ventilating gratings.

The first point to be determined is the actual nature of the smells, and (secondly) the causes which produce them. There are various kinds of smells, some pleasant, others objectionable, and some decidedly obnoxious, while there is a class which is utterly offensive. This division is not a satisfactory one, because some smells which are grateful to some persons are most offensive to others. We cannot divide them in this way. Another classification might be made according to their manufacture. The odor of flowers and of individuals—human or animal—differ as to their causation from the odor of a gas works, and yet they are allied. These smells arise from chemical changes in the structures of the bodies engaged, which give off minute particles of matter, usually of an ethereal or gaseous character; and being so are endowed with the attributes which belong to gases, each atom having a repulsive action toward every one of its own kind. These odors are more or less rapidly oxidized when discharged into the air. They do not act injuriously upon human beings except so far as they may take away the ozone or free oxygen which is in the atmosphere, and render the air less vivifying than it otherwise would be, and they cover up other and more dangerous smells. The odors from individuals are also distinctive.

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* Address delivered before the Croydon Microscopical and Natural History Club, Croydon, England, April 10th, 1889.

Some individuals smell very disagreeably, but the mere smell is not capable of reproducing its kind any more than those from flowers and chemical decompositions, and are not, therefore, disease-producing. They cannot set up disease in other people. The odors from recently discharged excreta are allied to this class. They are gaseous, have a tendency to diffuse themselves into space, are rapidly oxidized, and are not in any way Phœnix-like—that is, do not grow another generation of a similar kind. It is true that there are individuals with peculiar idiosyncrasies (as they are called) who cannot bear the smell of musk, or other penetrating odors. I have known one lady who could not stay in a room in which a blooming plumbago was placed without feeling faint, though I could not detect any smell at all from the flower. But these are not cases in point. Stinks of this character may seriously affect a person, but there is *no reproductive power in the smell.* It is this point upon which I wish particularly to dwell, so as to bring before you the true facts and the real nature of so-called sewer gas. The smell of a water closet which has been recently used is very objectionable, but there is no probability of mischief to the next user on that account. It is no more injurious than is rose-water, or the kennel of a fox. Fortunately for humanity that it is so. The odors from recent excreta are like to musk; they are ethereal, and tend to diffuse themselves, and so to become oxidized, and are rapidly destroyed. The excreta from a cholera or fever patient at its immediate discharge is perfectly harmless, but it is highly charged with ova, or germs of organic living matter, which are not so harmless. They are not volatile or diffusible, like to the ethereal smells of musk or of the fox. They require to be separated from the containing liquid, dried, lifted, and carried by currents of air. When so carried they may or may not fall into congenial soils. Any one walking upon the chalk downs on a midsummer day may see the analogue of that which takes place in sewers. The air blowing over the Southdown lifts up the seeds of the various thistles which grow there, and carries them on to arable fields below or out to sea. In the one case they reach a congenial soil and grow, to the discomfort of the agriculturist; in the other they are destroyed. So it is with disease germs from sewers.

There is something more than smell or something less, as it has not been proved that disease microbes have any smell at all, and of course it is only those which cause disease that need be avoided, and the sewer must have a tidal state to enable these germs to find exit at the street openings. This brings me to another point in the case. There are benign microbes as well as malignant organisms. There are microbes which are friends to man, as well as those which are inimical. Take a cubic inch of mould from the Beddington Sewage Farm, and it swarms with millions of living creatures, which are hard at work on a warm day preparing the organic matter in the humus by turning its nitrogen into nitrites ready for use by the vegetable world, if it happens that no radicle belonging to a carnivorous plant is at the moment ready to save the necessity for the change. It has been shown by direct experiment that the formation of the nitrites is due to this cause, and that the development of ammonia which takes place under some other circumstances is also a reaction due to another organism of another kind, the result being acid in the one case, alkaline in another. In the one case putrescence is avoided, a nitrite or other acid being formed; in the other it is hastened, and ammonia results. Here we have another line. How does this alteration come about? The answer is that it comes about very much in the earth or in sewers as it does in the air; let oxygen abound, especially ozonized oxygen, and nitric acid tends to form. The organisms which cause this tendency grow as vigorously as does the yeast micrococcus in a solution of sugar. When the air is highly charged with electricity the rain which descends in a thunder-storm contains an appreciable portion of nitric acid. But let the presence of oxygen be diminishing, and compounds of nitrogen form which are alkaline, and putrefaction is then promoted. A set of microbes come into being which are sometimes inimical to humanity; but here again we see the overruling hand of a Divine Providence, for one of the products of putrefactive agency—viz., sulphuretted hydrogen, is completely destructive to those organisms that especially revel in the humors of animal life. This result is shown in the work of the doctor. It is our duty as students to do some dissecting in our student days, and we may be requested to do so at any time by the coroner. It sometimes happens that the operator wounds himself. I have experienced this while making post-mortems upon those who have only been dead for forty-eight hours, more or less. This class of wound is always very serious, for disease germs may be transplanted; but a wound which is inflicted at the end of a dissection, when putrefaction is established, perhaps six or eight weeks after the death of the subject, has very little danger in it; for the disease-producing microbes, if they had been present, have all been destroyed in the process of the putrefactive action which has taken place. This result happens in sewers as well as in dissecting rooms.

There are two classes of microbes which have to do with destructive agencies—the moulds, which belong to the family of fungi, and the true microbe or schizomycites order. If air be sparsely admitted the moulds predominate, and there is a tendency to acid formations, carbonic acid, butyric, nitrous acid, etc.; but if it is all but excluded the schizomycites are most numerous, and it is on this fact that ventilation must be good or not at all. We now reach a point in our inquiry which is of importance. Microbic life is connected with decomposition of organic matter containing nitrogen in its constitution. Decomposition is accelerated or checked by outside circumstances, such as the presence or absence of air; it is also influenced by temperature, by moisture, and the presence or absence of other agencies, as is proved by the action of antiseptics and germicides. We may even advance a step further and say that without decomposition there is no development of microbic life; this is an important factor in the consideration of sewer air.

Let us now inquire as to the nature of the decomposition which promotes the formation of these organisms. As experience is gained we become more and more convinced that there is no known means whereby any such organism arises without the previous introduction of a parent germ of the same kind; that the spontaneous origin of such germs is not likely to happen, though no doubt in the case of some kinds of disease germs, such as that of typhus fever, the dormant organism is an ever-present commodity, as much as that which gives rise to the blue mould in cheese. It is also established by experiment that a germ may be made more malignant by cultivation, or by cultivation may be deprived of its malignancy. It is upon this fact that vaccination is found to be prophylactic against small-pox, and Pasteur is able to prevent the spread of splenic fever among cattle, and take out the sting of hydrophobia, by giving rise to a disease of a similar but of a milder type, though in the last-mentioned this may be only a choice of two evils,

Let us now ask whether any microbes are to be found in sewer air? Secondly, whether they are necessary parts of a sewage system? Thirdly, whether being there they are benign or malignant? And fourthly, whether it is possible for those which are benign to become malignant by cultivation in the sewer or outside, and *vice versa.*

My attention was first attracted to sewer air in the years 1853, 1854, and 1855. We had a ventilator fixed to the sewer at the Friends' School in 1854, which was then in Park Lane, Croydon. One of the teachers, who was of an inquisitive turn of mind, got on the roof and smelt at the opening, with the sequence of a severe attack of sickness. It was the first case in which I was able to draw a distinct inference as to cause and effect with which I came into contact, though I was then satisfied that sewer gas did cause much illness in the town. It was not long before that event that I had ventilated the soil-pipes of my house, then in the Dingwall Road, the first ventilator of the kind which was put up in Croydon, and by that means, I think, saved my household from the invasion of typhoid fever, which affected my neighbors in every house in that road right and left of me. From experiments carried out at that time in various houses in Croydon I was satisfied as to the dangerous character of sewer air when coming from unflushed, unventilated sewers, and I determined to do my best to get the Croydon system of sewers both flushed and ventilated. It was not, however, until after the year 1865, with its distressing events, that the local authorities would agree to adopt the principle that every individual house should have its own protector from the invasion of obnoxious gases. About that time the experiments of the German scientist, Professor Keber, of Dantzic, who followed up Erzenburgh's discoveries, had made out the connection between living organisms and disease, such as that which produced splenic fever in cattle and relapsing fever in human beings. I began my own experiments on sewer air about this time, and tried to get some facts from personal observation which should be worthy of a place in the literature of this society. I had proved to my own satisfaction that *potato blight* was caused by a mould fungus (the *Peronospora infestans*), though I did not, for one moment, claim to be the discover, but only verified that which was suggested by others. I had learned that *dry rot* resulted from another fungus (the *Meruleus lachrymans*). I detailed my observations upon *Peronospora infestans* in the *Times* newspaper, with the result of drawing upon me the anger of those who were working in the same field, perhaps in a more conclusive measure than I did, but of whose work in that particular field I was, like most other people at that time, quite unaware. I followed out my observations upon sewer air by suspending microscopic slides in those positions in which sewer air was distinctly found to make its exit. It was while I was so engaged that I made out that a number of Mr. Latham's charcoal baskets were inserted into openings into which air sometimes entered. These baskets had been provided to obviate the mischiefs from sewers by purifying the air by means of charcoal; some were openings for the admission of air rather than as exits. This was especially the case with two or three openings at or near to the Zion Nursery, which had been complained of as nuisances, but which were conclusively proved to my own satisfaction to be completely innocent of offence, for air went in instead of coming out, though it is quite probable that there was a reverse action occasionally. It was evident to me that the smell then complained of came from some other source than the sewer grating. The examination of the slides that I placed in the gratings showed a variety of organisms such as had been found in the wards of a large hospital, but I could not recognize any that I could accuse of being typhoid or other disease germs, which were the organisms I was more especially searching for. The arrested organisms were vibrios micrococci and vegetable germs, innocent of malignant action on man, as far as our knowledge then extended. I was not at that time aware of the plan of cultivation by means of gelatine solutions such as are now so successfully used in similar investigations—some of these I exhibited on a former occasion to the members of this society. I exhibited also some specimens and diagrams prepared by Dr. Heron, showing these developments, when I last addressed the society upon the subject of disease germs.

My last attempt at investigation in this direction was made upon a ventilating opening at the side of my garden upon Duppas Hill Terrace. The results of that investigation have been published in St. Thomas' Hospital reports for the year 1883. They involved a medical question which I was anxious to submit to the medical profession, and did not detail them to this society. The substance of my observations, which were carried on in the Winter of 1880-81, was that certain smells came from that ventilator which varied in nature as well as in intensity. Sometimes the smell was excessively offensive from the presence of sulphide of ammonium ; at others there was an ordinary sewer-air smell ; and at others a sweet, hay-like odor, which could not be called distinctly offensive. I never smelt that particular smell at that sewer without getting a relaxed throat and a cough in the next day or two, and on two occasions a distinct feverish attack, lasting for forty-eight hours. There was one point of importance in the microscopical examination of the slides which I suspended in the ventilator —viz., that whenever the sweet, hay-like smell existed, some very minute, highly refractive organisms, smaller than the ordinary micrococci, were seen, which were always absent when the sweet, hay smell was perceived. I never suffered from relaxed throat after inhaling the sweet hay smell, and I came to the conclusion that the highly refractive particles were the germs which gave me the relaxed throat, and that they were non-existent when putrefaction was thoroughly established. If I had known anything of gelatine cultivation then, I should certainly have cultivated those germs and tried to prove their connection with somewhat similar organisms which are found in diphtheria and croupous, or infectious pneumonia. (Some cases of these diseases did exist on Duppas Hill about that time.) It was while making these investigations that I discovered a defect in my own left eye, which led me to give up microscopical research, and which has since disabled me from assisting at the society's microscopic demonstrations.

Since that time I have been educating myself by the microscopic studies of others in the same direction. It has been clearly proved by experiment that actual putrefaction is generally destructive of the life of disease germs, so that the only result which need follow the inhalation of the offensive odors from sewers is the necessity of calling the attention of the local authorities to the fact that the sewer is a sewer of deposit, and before the stink escaped might have been a source of danger to those passing by that locality. We may depend upon it that it is not the sewers which stink that are the most dangerous, though before putrefaction was complete it was possible that there might have been disease germs escaping from that particular opening, though I shall show presently that they need not excite serious alarm.

Let us go back to

THE HABITAT OF THE GERM.

Many attempts have been made by various observers to catch the organism. So difficult is this that Professor Nageli, of Munich, endeavored to show by a series of experiments which he carried on for some years that they are not given off by moist surfaces, and Professor Frankland said, in 1877, that nothing particulate was given off from running sewage; but as he has also shown us since then that the bursting of bubbles disseminated particles of lithia in solution, it is evident that whenever bubbles burst any particulate matter in the substance of the bubble might be disseminated as well as the lithia. Some experiments have been made by Mr. J. S. Haldane in the Westminster Palace sewer, which go to prove that micro-organisms were few whenever there was a regular current of air; that with little or no draught there was an increase of carbonic acid, and with that an increase of micro-organisms, but they were moulds rather than bacteria. But another very curious thing was found to exist—viz., that when the ventilation within the sewer was much improved, so that Co-2 was materially diminished, there was a considerable increase in the number of bacterial organisms, as if a diminution of oxidation allowed of the increase of germs.

Mr. Haldane examined the air in the Bristol sewers, which are not ventilated. He found that in those sewers the moulds exceeded the bacteria, while in the air of the streets the bacteria exceeded those of the mould.

Hesse has shown us that although the spores of the moulds are much larger than the bacteria they remain suspended in the air much longer than do the bacteria. Mr. Haldane concluded that it is to the presence of air from without that we owe the more prolific existence of bacteria in sewers, and not *vice versa*. His experiments led him to conclude that true sewer air contained fewer micro-organisms than the air of a street, or even the air of an ordinary living room. Our experimenter did find, however, that when the sewage was splashed about there was a large increase in the number of organisms observed, which is a great argument against the formation of large sewers. It is argued that there is much doubt as to the power of sewer air to disseminate typhoid germs, independent of water supply. My own experience, arrived at by passing through three epidemics of that disease in Croydon, fully convinced me that when sewers, such as some of ours were in 1875, are loaded with typhoid excreta, the germs which are capable of reproducing the disease do get conveyed from sewers into human beings by aerial means, either directly by air or through the water supply. In those epidemics, the very large number of domestic servants, especially kitchenmaids and cooks, who became victims to the disease, was one of their marked characteristics, the reason being that those persons went downstairs into the basements in the early morning, before the house was thoroughly ventilated, and inhaled the sewer air that had collected in the kitchen during the night. Then there was Doctor Buchanan's demonstration as to the reason why fever existed on one side of two or three streets, which he specified, in which the water supply was the same, and the sewer the same. In one set of cases the air was admitted into the houses from the sewer; in the other it was not. It is clear, however, that

ORDINARY SEWER AIR CANNOT PRODUCE MISCHIEF

unless the organisms from particular forms of disease exist in the sewer. It becomes the bounden duty of the authority to take care that no such organisms continue to live and multiply there, and that when cases of any infectious disease exist in a given locality they shall pay particular attention to the sewers in that locality, and prevent them from discharging disease germs into the streets from the open grids, which are left for ventilating purposes. They will do this if they are only partially ventilated, and are sewers of deposit.

We are now in a position to answer the four questions which I have put forward.

1st. Do microbes exist in sewer air? No doubt they may. If sewers are properly laid, and there is no sewage deposit, no impediment to discharge allowed to take place, and no part of a given length allowed to have stagnant air in any part of it, there will be no disease germs.

Disease germs require time for development, and if excreta be hurried away to their proper destination, where they become *bonnes bouches* for the carnivorous plants which should be found on sewage farms, there is an end of their *rôle* as disease germs. But if the sewers are sewers of deposit, some may settle on the pipes; they may fructify there, and their living, growing spores be carried away by the currents of air and then discharged, to the possible danger of the people. They are not, however, the necessary parts of a sewer system, but are the accidents of defect. I have not the least doubt, myself, that a stinking grating is not dangerous, from the circumstances I have mentioned. It is an undoubted fact that the year which produced a panic in the House of Commons, and by which the Metropolitan Board of Works was brought into being, was produced by the stinks from the bed of the Thames. It was the healthiest year that London had experienced for a long time, as far as enthetic disease is concerned, at least, if statistics prove anything, and yet the Thames smelt so badly that our senators could not carry on their work in the committee rooms of the House of Commons.

Stinking sewers should not be allowed to exist, but to my mind it is better to have the open grids in the streets than to convey the mischief, which is possible, into positions preventing our getting the knowledge that the sewers require to be scoured. Every line of sewer should be well scoured in the crown of its arch as well as at the bottom, and after the scouring thoroughly flushed by a body of water that fills its calibre completely. The flushing which I see going on in our town from a two or three-inch tube is all but useless for the purpose required, except where there is a stoppage, which produces a head of water and fills up the sewer.

Sewers of comparatively small size, in exactly straight sections, so that they may have the lamp test applied, and which sewers can be flushed by the sudden discharge of a large body of water at frequent intervals, when the temperature of the sewer rises above a certain point, will remove the colonies of disease germs. They do grow on the sides and invert of the arch of sewers as certainly as they may be made to grow in tubes containing pure solution of gelatine. If the ventilation is tardy, so as to allow of fructification, the colonies give off their spores, and these may possibly infect a passer-by who happens to be infective, and upon whose mucous membrane the organism happens to fall. I say this is a possible contingency, but it will rarely happen.

These germs are of two kinds. The one is a living, growing organism, which I may compare to the barley which has been made to sprout in preparation for malting. If this organism be planted on a mucous surface ready for its reception, it may take root, reproduce its kind, and set up its own form of disease; but, like to the white corpuscles in human blood, exposure to pure air for a very short period indeed is fatal to them. The fact is made out in the operation called transfusion. If the blood, in its passage from one person to another, be exposed to the air for more than a small fraction of a second, the corpuscle dies, and the patient, through at first reviving, afterwards succumbs to the mischief produced by the dead fibrine. If growing germs are exposed to a current of fresh air, free from ammonia and with its fair proportion of oxygen, in the sewers, the germs will be deprived of vitality before they escape into the open air. It is upon this fact that the ventilation of sewers must be complete if such ventilation is to be safe. A partial ventilation does not provide for the death of the living, growing germ, and it is this living, growing germ which does the mischief; for the other form, the resting spore, will not rise from the watery bed.

The growing germ is also destroyed by sulphuretted hydrogen and its binary compounds, the product of the decomposition of all albuminous matters. I say, then, that

WELL-VENTILATED SEWERS ARE SAFE.

They are doubly so if they are thoroughly and properly flushed. If they are not sewers of deposit they cannot produce sewer gas, and if they thoroughly stink, disease germs cannot live in them, so that in either case there is no danger; but there is a possible danger, when it is not discoverable by reason of smell, if those openings which give out offensive odors are occasionally free from the discharge of stinking matter, and some one who is not germ-proof stoops down at the opening. Children will be, may be, victims. If we bear in mind that in a pure atmosphere the life of the germ is momentary, all serious danger is at an end. I have said in a pure atmosphere. If the air is impure, if it contains alkaline gas in the form of ammonia rather than the nitrous or sulphurous form of gases, there is the possibility of a much longer life than is the case when the air is pure or has an acid reaction. It is to this fact that diseases spread in unventilated, dirty houses, and if it was not for the sulphurous acid which is formed in the London smoke fogs, it is most likely that the life history of disease germs would be made more manifest than it is when we have an atmosphere entirely without ozone for days together.

We may take it as true that living disease germs from sewer ventilators are possible factors, but they are rarely provided. If the sewers are only partially ventilated, with tendency to the formation of carbonic acid in excess, there is a mould formation rather than bacterial life, and moulds are not yet proved to be zymotic disease germs to human beings. They are comparatively benign; like to benign bacteria, they help to purify both air and water, and return the albuminoid or nitrogenous matters to their simple elements, ready for use by the vegetable world.

I cannot conceive benign organisms becoming malignant in the processes which take place in sewers, unless the temperature be raised much beyond that which is ordinarily found in proper sewers with an abundant water supply. I mentioned, when speaking of sewer flushing, that this process must be frequent at certain times, when temperature is higher than usual. If at any time the temperature in this country should be continually high for a month or six weeks together, so that the temperature of the London water should be kept above 65° for a month, London may prepare for a tremendous outbreak of typhoid in the succeeding Autumn. It requires a continuously high temperature for probably a month to develop typhoid spores in the drinking water as at present manipulated at the filter works of the water companies. That season will come some day, with the usual result, "panic," and consequent loss.

For the same reasons, unless sewers have their temperature permanently raised for some time, there is no danger from benign germs being replaced by malignant; but I believe that it is possible for the continuous discharge of hot water so to raise the temperature of a drain-pipe that it may be a hidden source of danger, and that such continuous discharges of hot water from manufactories may be dangerous in badly constructed sewers, though an excessive heat, such as is experienced on a sunny day, destroys bacteria; but if sewers are well and truly laid, if the pipes are smooth inside and have been properly jointed, if they flush clean and are properly flushed at intervals, depending up the temperature of the sewage, then there is no real danger from the admission of hot water into sewers.

I think I have dealt with the four points to which I have drawn attention, and I will conclude what I have to say on this subject, that the greatest danger from drains is not in the public sewer, but in the house connections and in the private drains laid by speculative builders. They are only occasionally used, they become all but dry at frequent intervals, and if they are not as clean as a back-kitchen sink ought to be, they will, in spite of all precaution, occasionally produce sewer air. They must be ventilated even more perfectly than the public sewers, and so cut off from all direct communication with the house that it shall be absolutely impossible for any of the products of decomposition, if they arise, to find their way inside the dwelling and carry living, growing germs with them. If these arrangements are carried into effect, those living in such houses may defy disease germs and live in perfect safety from their attacks.

MISCELLANEOUS.

How to Preserve The Hands.—Surgeons, obstetricians, nurses, and others who are compelled to use the various antiseptics, often experience considerable trouble from reddening, eczema, and cracks of the skins of the hands, the result of repeated washings and scrubbings with antiseptic materials. Sometimes this condition becomes such as to demand entire abstinence from the use of them for a while.

Fluid antiseptics produce especially a roughening of the skin of the hands, which results in a cracking when the hands are subsequently exposed to the cold air and are not sufficiently dry. Several methods have been proposed to keep the skin of the hands soft and pliable. Of them the one most useful and the easiest to carry out is that recommended by Professor Liebreich, and published in an article on the above subject by Dr. Geo. Meyers, of Berlin (*Med. and Surg. Reporter*). It has nothing to do with the disinfection of the hands, but merely serves to keep their skin in a normal condition. Moreover, it can be used with all disinfectants without having to fear any further effects on the hands, since its use renders the skin smooth and soft. After thoroughly washing the hands with soap, they are well wiped and thoroughly dried; then the hands are rubbed with a little lanolin, and any excess removed with a handkerchief. A little extract of vanilla and oil of rose added to the lanolin makes it more pleasant to the sense of smell.

℞.

Lanolin puriss. - - - - - - -	98 parts.
Extract vanilla - - - - - - -	2 "
Olei Rosæ - - - - - - - -	gtt. j.

Another salve can also be made by substituting for 19 parts of lanolin an equal amount of paraffin.

The lanolin may be conveniently carried about in small metal collapsible tubes. It is to reapplied after every washing.

In speaking of the favorable effect of lanolin he mentions its power of mixing with water, by virtue of which, after washing the hands, any water remaining on the skin from imperfect wiping is absorbed by the lanolin, and the hands prepared for the cold with the least possible grease. In practice he has used the method with good result for rubbing on the face, as in actresses whose skin had suffered from the use of paint.—*Weekly Med. Review.*

EXPLORING THE BRAIN THROUGH CAPILLARY HOLES, WITH A SUGGESTION CONCERNING BRAIN LOCALIZATION.—Considering the fact that trephining of the skull is an operation of some gravity requiring the services of a regular surgeon, and in view of the frequency with which the presence of abscesses, cysts, etc., are found post-mortem in the brain, in situations in which they might be reached by the aspirating needle, Dr. Souchon, Professor of Clinical Surgery, in Tulane University, suggests (*New Orleans Medical and Surgical Journal*, May 1889,) a simpler, readier, less formidable and less dangerous method of searching for such fluid collections within the skull. He proposes that, after the hair has been snipped from the selected spot by the points of a pair of sharp scissors, and the scalp has been rendered aseptic, a hole shall be made through the soft parts of the scalp with a sharp-pointed, aseptic bistoury. Through this the bit of a watchmaker's drill is to be introduced, and a hole is to be drilled through the bone, the bit being guarded by a gauge to prevent it from penetrating into the brain substance. The bit is then to be withdrawn and the needle of a hypodermic syringe (*twice as large* as the ordinary needle) introduced into the brain. If a tumor is present, the needle will convey a feeling of resistance ; if no solid tumor is present the needle must be gradually forced more and more deeply into the brain, the piston being retracted at intervals, in order that any liquid at the point of the needle may be withdrawn and examined.

Dr. Souchon has convinced himself by experiments on dogs that such a procedure is quite safe. He points out the advantage, that several points in the brain may be explored at the same sitting. He thinks the day will come, when the skull will be drilled in cases of cerebral hæmorrhage, and the blood aspirated here as in other situations. If Dr. Souchon's suggestions prove to be reliable, the method will be of great value in the application of electric currents to different regions of the brain, the insulated electrodes being introduced through the drill holes into the brain, and the effects of the stimulus noted, as regards muscular movements, sensations, etc. This would lead to great advances in cerebral localization.

PROFESSOR KREMIANSKI'S TREATMENT OF PHTHISIS.—Professor Kremianski, whose name is known in connection with the treatment of phthisis by means of the inhalation of aniline, and the internal use of aniline and acetanilide, has recently published a pamphlet giving some account of the latest practice as employed in his out-patient clinic, where he has accumulated a large experience, having already treated fully a thousand cases. Latterly he has found great advantage from combining iron with his usual antiseptic treatment, seeing that it minimizes the tendency to the blue coloration so often noticed in patients who are taking aniline or antifebrine; besides, it has, of course, an admirable effect on the anæmic condition which is common to most phthisical patients. He also sometimes employs an ointment for rubbing in under the clavicles, consisting of aniline, boracic acid and oil of peppermint, an ounce of each of these ingredients being combined with eight ounces of white vaseline.

Professor Kremianski has sometimes been accused of sailing too close to the methods of quacks, but no one can read his published cases without being convinced that, while there is one main idea—viz., that of attempting the destruction of the tubercle bacilli by means of substances poisonous to them, especially aniline—Professor Kremianski's methods are eminently scientific and very far removed from the empiricism of the quack. Every case is examined and diagnosed with great care, measurements of all kinds, microscopical examinations and physical signs being recorded at frequent intervals, and each case being treated on its merits and according to the special needs and idiosyncrasies of the patient. Some interesting cases are given in the pamphlet referred to, several of which are recorded by Professor Kremianski's principal coadjutor, Dr. Goliarkhovski; and some charts showing the improvement in the temperature and general physical conditions during the progress of the treatment. In some of the cases the bacilli seemed to have disappeared, while in others their numbers had decreased to an enormous extent. It must not be forgotten that a very important part of the treatment consists in giving the patient considerable quantities of a specially prepared meat powder devised by Professor Kremianski, a notice of which appeared in the *Lancet.*

AFTER-PAINS (*Trans. of N. Y. State Society*).—Dewees is authority for the following rules for the prevention of after-pains:

1. "Do not rupture the membranes before the neck is completely dilated."

2. "After the head is born make no traction, but allow the uterus to expel the shoulders and trunk."

3. "Do not extract the placenta until the womb is thoroughly contracted."

4. "After the placenta is delivered, excite the womb so as to oblige the muscular fibres to contract as much as possible."

Leishman says: "Nothing does so much to prevent their being severe, as pressure outside upon the womb during the expulsion of the child and placenta, thereby producing firm contractions." When traction is made upon the cord before the placenta has been expelled from the uterus, the placental vessels are often torn and bleed, and thus a clot is formed. Efforts to deliver the placenta should be directed to producing contractions. These will expel it without leaving a clot; then, by continuing to grasp the womb through the abdominal walls, should it soften, the fact can be recognized and efforts made to prevent relaxation. This can be done with one hand and the placenta removed from the vagina with the other.

Treatment.—First remove the cause. If a clot is formed which the uterus cannot be made to expel by contractions, injections of warm or hot water, or possibly manual interference, may be necessary. Loaded bowels, a distended bladder, clots in the vagina, and the pressure of bandages, often produce irregular contractions. Sometimes, from carelessness in manipulations to produce contractions, or subsequently from the position of the patient, the uterus becomes prolapsed, or tipped to one side, causing great suffering and endangering the future health of the patient. Many cases of uterine disease following confinement are due to this cause. These conditions can be ascertained and corrected through the abdominal walls. When every mechanical cause is removed we are prepared to consider, secondly, medical treatment.

This may call for any treatment in the materia medica. There is no specific, no panacea. A careful specialization will give most satisfaction and best results. When our best efforts in this direction, after reasonable trial, fail, we should then, without hesitation, resort to palliatives, prominent among which are heat, dry or moist, ergot, quinia, opium, morphia, ether, and chloroform, and should be used *pro re nata.*

SUTURES AND LIGATURES IN ABDOMINAL SECTION.—Authorities are much divided as to the best material for sutures applied to the abdominal walls, and to intra-peritoneal structures in abdominal section.

The subject is most important in regard to the Sänger-Leopold Cæsarean section, where a very large number of sutures are applied to the uterine wound, and cut short, the uterus being replaced in the abdominal cavity. Dr. Thompson, of Dorpat, has published in the *Centralblatt für Gynäkologie*, June 15th, a series of experiments intended to throw more light on the suture question. These experiments were similar to Spiegelberg and Waldeyer's, carried out many years ago, to ascertain the fate of sutures applied to the cornu of the uterus in bitches, when the relative merits of the intra- and extra-peritoneal treatment of the ovarian pedical were undecided. Dr. Thomson rejected silver as an unabsorbable material, and used for his experiments carbolized catgut, chromic gut, silk, and silkworm gut. All these suture materials were carefully sterilized, and, as much as possible, of the same thickness. As the experiments chiefly bore upon the use of sutures in Cæsarean section, Dr. Thomson chose for experiment rabbits, cats, and bitches that had just given birth to young. An incision, a few centimetres in length, was made in the right and also the left uterine cornu, and united again by suture, a different material being employed on opposite sides in each case. The omentum and the abdominal wound were also sutured, in order to test the possibly different fate of sutures according as they were embedded in those structures or in the uterus. It was found that there was little or no difference. At different intervals of time the subjects were killed and the sutures inspected. Carbolized gut was found to undergo complete absorption in seventeen days, little but the knots remaining at the end of ten days. Chromic gut remained quite unabsorbed at the end of seventeen, fifty, and even sixty four days, the portions projecting freely into the peritoneal cavity being more or less covered with membrane. At the end of fourteen days the silk threads were found to be loosened, but intact; in fifty days partial absorption had taken place; in sixty-four days only a few small traces of the silk could be detected. Silkworm gut underwent no change; at the end of sixty-four days it remained intact, its sharp ends projecting into the peritoneum.

From the above experiments Dr. Thomson concludes that, for Cæsarean section at least, silk is the best and safest material for suture, since it can be thoroughly sterilized, and undergoes sure but not rapid absorption, Chromic gut, silkworm gut, and silver are bad materials, being unabsorbable. Carbolized catgut is unsafe, as it is speedily absorbed.

PURGATIVE EFFECTS OF GLYCERINE.—Dr. F. F. Mïlëëff, in *Novostï Terapïï*, details his experience concerning the use of small glycerine enemata and suppositories in habitual constipations of various kinds. The main results of his observations may be condensed as follows:

1. In those cases where accumulation of fæcal masses takes place in the lower portions of the large bowel, a rectal injection of one or two drachms of pure glycerine in an adult, and of one-half to one drachm in a child, is invariably followed by stools occurring in two or three minutes.

2. The fæcal masses do not show any signs of liquefaction, or even softening; still, owing to lubricant properties of the drug, the act of defecation proves to be fairly easy and comfortable.

3. The enemata do not give rise to any slightest painful or unpleasant sensations about the rectum. Neither do any phenomena of rectal irritation supervene, even on a prolonged employment of the injections.

4. The purgative effects of glycerine should be attributed to its stimulating action on the nervous and muscular apparatus of the large bowel, which action is probably determined by the drug greedily extracting water from the intestinal mucous membranes with its nerve fibres. The desiccation irritates the latter, and thus exacts a reflex contraction of the intestinal muscular coat. The hypothesis finds a strong support in the fact that any dilution of glycerine with water markedly weakens its purgative action, and that the more in proportion, the larger is the amount of water added.

5. Glycerine enemata are especially indicated (*a*) in the constipa-

tion of pregnancy, where ordinary water enemata are inconvenient on account of their considerable bulk, which causes discomfort to the woman; and (*b*) in infantile constipation caused by unduly prolonged feeding on milk alone, and associated with fæcal accumulations in and consecutive distension of the sigmoid bowel. In cases of the kind, glycerine enemata are very useful on account of their energetic action in the intestinal muscles, and convenient because of their small bulk.

6. As to glycerine suppositories (containing half a drachm of the drug each), they are said to act well (in five minutes or so) only in such cases where no pure glycerine enemata were previously employed, otherwise they remain inactive. Hence, he commences the glycerine treatment of constipation with suppositories (a piece at bedtime), and passes to enemata as soon as the former cease to secure the result desirable.

7. As regards the apparatus for the enemata, any special contrivances are superfluous. He uses for the purpose an India-rubber urethral syringe, with a piece of thick-walled elastic tube on the nozzle.

Dr. Grewcock, in *London Med. Recorder*, says he "found out quite accidentally a novel method of applying glycerine," which is "equally efficacious with the clyster. . . . If a piece of cotton-wool alone, the size of a nut, is well saturated with glycerine and inserted as a suppository, in a short time a copious motion is produced."

DEATH OF A FASTING MAN.—An attempt on the part of a Frenchman at Lyons to imitate the foolish feats of such men as Succi and Tanner has, it is reported, had a melancholy termination. The man reached his twentieth day of abstinence from food; but his desire to continue the experiment was frustrated by death.

MEDICAL NEWS AND NOTES.

DR. HENRY C. COE has been appointed Professor of Gynæcology in the New York Polyclinic, to fill the vacancy made by the death of Dr. James B. Hunter.

PROFESSOR ENGLER, of Breslau, has been appointed to the Chair of Botany at Berlin.

A WOMAN in Hudson, Mass., has just died "on account of want of medicine, which could not be obtained on account of the compulsory closing of the drug stores by order of the Selectmen." Such is the cause of death assigned in the certificate of her physician, who had prescribed brandy for her. But what will the fanatics of Hudson care? They will think that it is better to die than to drink brandy on a Sunday.

THE first International Congress of Physiologists will be opened at Basle on September 10th next, and will sit for three days.

DIED, in New York, on August 12th, Dr. Alexander B. Mott, aged sixty-three.

INDUCTION OF PREMATURE LABOR.—Dr. Chenevière, in the *Revue Médicale de la Suisse Romande*, gives an account of a simple method which he has employed for inducing premature labor. The cervix is brought into view with a speculum, and about twenty small iodoform tampons are passed through the os uteri by means of a thick sound. The plug reaches rather above the internal os. A larger plug is then placed against the vaginal portion to keep the cervical plug in position. Three cases are given in which the method was adopted. In the first, pains came on in two hours, and the labor was terminated in fourteen hours; in the others, more than one plugging of the cervix was necessary, labor taking place on the following day. In one case some of the tampons were only passed several hours after the expulsion of the fœtus and placenta; and the author therefore thinks it well to have the tampons counted to avoid the possibility of any being left behind.

THE PREVENTION OF MAMMARY ABSCESS.—Miall says that when a mammary abscess is on the point of forming, he has frequently seen all the symptoms disappear in a few hours under the influence of fomentations with hot water and carbonate of ammonia. He uses an ounce of the carbonate in a pint of water, and when solution is accomplished the temperature of the fluid will be hardly too high for fomentation liquid. He applied them from half an hour, to be commenced with cloths dipped in the liquid, to two hours, at the same time protecting the nipples. He has often had immediate relief, and seldom requires more than three applications.

ANTIPYRIN and lanoline have been adopted as officinal in the Austrian pharmacopœia, a sufficient endorsement of the value of these two modern preparations.

FIFTY THOUSAND DOLLARS has been voted by the recent Legislature of Texas for the establishment, at Galveston, of a medical branch of the State University, and the city of Galveston gave $25,000 additional.

FOR some time past it has been remarked that the order of the day in France was for small families, and the population of the nation was seen to be decreasing. To prevent this, the Chamber of Deputies has decided that the personal and household property of the fathers and mothers of seven children shall be exempt from taxation.

AN Albany medical journal is responsible for the statement that half a teaspoonful of chloride of ammonium in a goblet of water will almost immediately restore the faculties and powers of locomotion to a man who is helplessly intoxicated. If true, every soda fountain will soon be supplied with the new remedy, and acetanilid and will again be relegated to diminished usefulness as a purely therapeutic agent.

HE TOOK HIS FRIED.—A local physician tells the following story anent the Brown-Sequard "Elixir." A man about town, whose general condition was very bad, called upon the physician. It was at the time that the Brown-Sequard excitement was at its height. The ambitious son of Æsculapius, anxious to try the new method, warmly suggested it to his victim. The patient had heard about it, but wished to know what it was. The doctor gave him an elaborate explanation of the technique, which was listened to approvingly by the man about town. The latter, however, suddenly asked: "Doc, what is the stuff which you inject?" The doctor explained that he used the testicles of lambs only. "Excuse me, doc," said the patient, "but I think I'll take mine *fried!*" Before the astonished physician could explain, he was gone.—*St. Louis Med. and Surg. Journal.*

DR. JOHN O. ROE was elected Chairman, and Dr. F. H. Potter Secretary, of the Section on Laryngology and Otology of the American Medical Association for the ensuing year. The next meeting will be held in May, 1890, at Nashville, Tenn.

CHLORAL HYDRATE is recommended as an efficient gargle for early stages of quinsy, and claimed to be nearer a specific than anything noted in text-books. Three or four grains to an ounce of glycerine is used as a gargle, and is locally antiseptic, astringent and sedative. Dr. W. M. Beck, of Kensington, Kans., is the authority for above.

SIR SPENCER WELLS recently, on the Morton Lecture on Cancer, after making every allowance for more careful diagnosis for increase in population and for better registration, states that the cancer mortality in England and Wales has increased during the past twenty-six years from 360 to 606 per million, and there is a similar increase in Ireland, Scotland, and New York, the increase being more particularly marked in the male sex in middle life. As regards treatment he condemns the use of caustics, etc.; advises the complete removal of the breast when that gland is affected, except when the growth is very small and close to margin of the gland. When there are axillary tumors, and the breast itself is not affected, he would not remove the breast. In cases of cancer of the uterus he favors vaginal hysterectomy, and quotes statistics to show how successful this method has been.

ON November 12, 13, and 14, 1889, the Southern Surgical and Gynæcological Association is to be held at Nashville, Tenn. Dr. Hunter McGuire, of Richmond, being President.

DR. LEWIS A. SAYRE has lately received a diploma of honorary membership in a St. Petersburg medical society.

WE print elsewhere in this issue of our JOURNAL some remarkable statements from the well known manufacturing and importing druggists, Messrs. Tarrant & Co., New York, which are based upon a recent court decision in Berlin. Every physician who is interested in preventing substitutions, or in obtaining genuine preparations, should give the communication a careful perusal. The time has gone by when business can long thrive through false swearing.

THE fourth session of the French Congress of Surgery will be held at Paris from the 14th to the 20th of October, under the Presidency of Baron Larrey. The principal questions to be presented for discussion on the occasion will be: (1) The immediate and remote results of operations for the removal of tuberculous growths; (2) the surgical treatment of peritonitis; (3) the treatment of aneurysms. Communications should be addressed to Mons. F. Alcan, 108 Boulevard St., Germain, Paris; or to Dr. S. Pozzi, Secretary-General, 10 Place Vendôme, Paris.

DR. HENEAGE GIBBES, who left London in January, 1888, to take the post of Professor of Pathology at the Ann Arbor University, Michigan, has been recently appointed to the chair of histology in addition to the one he already holds. Dr. Gibbes' skill as a histologist was well known in London, and the University of Ann Arbor is to be congratulated in having secured the services of so able a man.—*Lancet.*

DR. RICKETS, of Cincinnati, in the course of a paper read before the Cincinnati Obstetrical Society on the "Abuse of Pessaries," said:

"A prominent obstetrician of Cape Town told me recently that while he was on his way to see a patient he was called in and urged to attend a lady in labor, as her obstetrician could not be found. Upon digital examination he found a large-sized Hodge's pessary, and with difficulty removed it. Finding that the presentation was a normal one, and being in a hurry, the doctor called in an American physician to attend the case, and left the house. After the birth of the child, the American physician wrote the following note to the family physician, and left the house:

"'My Dear Doctor.—Dr. S. delivered your patient of a huge Hodge's pessary, and I have delivered her of a small child.

Very truly, DR. C.'"

THE following call has been issued: "The members of the medical profession in Alabama, Georgia, and Tennessee, are requested to meet in Chattanooga on the third Tuesday in October, for the purpose of forming a Tri-State Medical Association. All will be admitted to the meeting of the association, but the membership will be restricted to graduates of regular medical colleges in good standing."

This call is signed by committees from Jackson County, Alabama, Medical Society; Chattanooga, Tennessee, Medical Society; Cleveland, Tennessee, Medical Society; Cartersville, Georgia, Medical Society; Dalton, Georgia, Medical Society.

It is hoped that there will be a general attendance of the profession. Papers of interest have been promised by prominent men.

This organization will be independent of all other societies. It will be an association of individual members of the profession of medicine, and will be managed in the interest of medical progress.

The session will continue two days, and a circular will be issued in due time announcing the titles and authors of papers.

AMERICAN PUBLIC HEALTH ASSOCIATION, BROOKLYN, 1889.—The Seventeenth Annual Meeting of this Association will be held in the Hall of the Brooklyn Institute, Washington and Concord Streets, October 22, 23, 24, 25. The following topics have been selected for consideration at the meeting: I. The Causes and Prevention of Infant Mortality. II. Railway Sanitation. (*a*) Heating and ventilation of railway passenger coaches. (*b*) Water supply, water closets, etc. (*c*) Carrying passengers infected with communicable diseases. III. Steamship Sanitation. IV. Methods of Scientific Cooking. V. Yellow Fever. (*a*) The unprotected avenues through which yellow fever is liable to be brought into the United States. (*b*) The sanitary requirements necessary to render a town or city proof against an epidemic of yellow fever. (*c*) The course to be taken by local health authorities upon the outbreak of yellow fever. VI. The Prevention and Restriction of Tuberculosis in Man. VII. Method of Prevention of Diphtheria, with Results of such Methods. VIII. How far should Health Authorities be permitted to apply known Preventive Measures for the Control of Diphtheria. IX. Compulsory Vaccination. X. Sanitation of Asylums, Prisons, Jails, and other Eleemosynary Institutions. Much and increasing interest is felt in the work of this important Association.

EDITORIALS.

THE DISPOSAL OF THE DEAD.—It will be remembered by our readers that in our August number we referred at length to a new method of disposing of the dead, viz.: by desiccation. We are in receipt of a reprint of a paper read by Dr. Jno. M. Peacocke, before the Medical Society of the County of Kings, in which the disposal of the dead from the earliest times to the present day is reviewed. It is, indeed, a rare thing to read an article so exhaustive, scholarly, faithful and well outlined as this is. The information brought together by the author is vast, and his method of digesting it is equally as valuable as the facts.

We are carried from the earliest times, when men cast their dead out to be devoured by the beasts of the field and forest, to the present, when men are reducing the bodies of the dead to a handful of ashes in scientifically constructed crematories. The author has laid the utmost stress upon the influence on the water and air of a community, by the inhumation process. Microbes of infectious diseases have been proved to exist both in the soil of a cemetery and in the circumambient air.

If a grain of wheat retained in a mummy for 3,000 years has been known to sprout when put under favorable circumstances, why might not a disease germ lie less time in the soil and renew its cryptogamic reproduction when put under favorable circumstances. The assumption is too reasonable to doubt, and facts are not wanting to prove the possibility. Dr. Peacocke's researches conveys to the morbidly sensitive the information that *worms* do not devour the body. Only in two well-authenticated instances have worms been found in decomposing remains. The point that men should sacrifice their sentiments to the weal of the human race is strongly made, and an interesting historical sketch is given of incineration. To those who think that this method is unholy and against the principles of our religion, the pertinent observation is made that exactly the same thing is accomplished by decomposition as by incineration ; the difference between the two lies in the matter of time taken to accomplish the oxidation of the tissues. The God who formed the body in its symmetry and beauty out of the dust of the field can call it forth again though the particles thereof be scattered to the four winds of heaven. Taking as his text the fact of the long preservation of bodies that have been found desiccated under the sands of deserts, and particularly the method of desiccation adopted by the Royal Incas of Peru for preserving their dead, the author inclines toward desiccation as the best means of disposing of the dead. Sentiment, since it is not born of reason, but rather of prejudice, will have to be respected and regarded. Desiccation in great measure saves us the shock that incineration must bring to sentimental minds. For it preserves us the form and semblance of our loved ones, taking from them water only. Above all things it does not cloud any cause of death, particularly in cases of death by poisoning. Incineration could easily defeat the aims of justice. The medico-legal aspect of this fact is too important to be forgotten for a moment. It likewise would prevent the disgust and horror of exhumation. In conclusion the author evidently declares himself in favor of dessiccation as the best means of disposing of the dead and refers to the method described by us in our August number, the one proposed and described by the Rev. Mr. Treat.

LICKING SORE EYES.— *The Montreal Medical Journal* reports that at a recent meeting of the Societé Francaise d'Ophthalmologie, Professor Costomiris, of Athens, made a curious communication concerning the custom prevalent in Greece of licking sore eyes.

The Greek populace, since the days of Æsculapius, have practiced this method of cure. For this recherché method, a person, generally a girl, with clean teeth and a sweet mouth, who is without the tobacco habit, is selected.

The lickers commence work before eating ; they are required to cleanse the mouth carefully and chew a small quantity of a plant known as *Galega officinalis* for the purpose of disinfection.

Dr. Costomiris stated he had watched the practice for seven years, and had observed excellent results in ulcers of the cornea and keratitis, particularly of the diffuse form. Very often members of the family are engaged to do the licking—it being somewhat difficult to obtain lickers outside the family circle. We are informed that Dr. Costomiris recommends the procedure in the treatment of sore eyes.

We ourselves have known this custom practiced among the Polish Jews in this city, and amongst the more ignorant negroes in the South. Amongst these people it seems less care is exhibited in the selection of the operator. We have heard that this custom is likewise common amongst the American Indians. It is quite possible that some of the cases of hard chancre of the lids may be explained by the practice of this custom, although infection in such cases from an amorous kiss seems more probable.

We are all aware of the fact that a dog licks his sores, and that they are kept clean thereby, and apparently recover rapidly under the licking. Bacteriology has taught us that the human saliva even contains numerous classes of microbes. Many of which are saprogenetic. If such be the case in the human species, how much more foul and pestilential must the saliva of dogs be, who are by nature scavengers and eaters of filth? And yet dogs lick their sores and cure them by licking. We are told in Holy Writ that dogs came and licked the sores of one Lazarus as he lay in front of the rich man's door. We had always attributed this to moral perversity and morbid appetite on the part of the dogs, but perhaps they were stimulated by charity, and were even conscious of the healing power that lay in their tongues. Dr. Costomiris recommends the licking of sore eyes, and his recommendation is based upon seven years of observation of the practice. We will follow Dr. Costomiris when it shall have been proved that this is the best method of curing ulcers of the cornea and keratitis, but as long as other means are at hand—means that have been shown to be efficacious—we chose them, and out of deference to the researches of the bacteriologists we prefer to keep the tongue in the mouth of its possessor, where it belongs by right. The only saving clause in this bestial therapy lies in the selection of young girls with clean mouth and good teeth. Surely this is the best choice that can be made under the circumstances, but we would caution the Greeks against the use of this organ in ocular therapeutics, though it be the aseptic pink-tinted tongue-tip of the Maid of Athens herself.

THE VIRGINIA MEDICAL SOCIETY.—The Virginia Medical Society held its annual meeting this year at Roanoke, Va. This place is perhaps the very best place that could have been selected, with the exception of the larger cities of the State, since it is accessible from the South, North, East and West. The meeting was largely attended by the State Faculty, and there were not lacking honorary fellows from a distance, and invited guests.

The papers read were varied and numerous, as a rule interesting, and in many cases exhibited much research, if not originality. We were particularly struck by the excellent English contained in the majority of them—a thing by no means common amongst the writings of doctors. Barring a plethora in the hotels, everything possible was present to contribute to the pleasure of those attending.

A banquet was served on the evening of the third day, when, after the inner man had been satisfied, the doctors proved themselves orators, as they had already proved themselves scientific essayists. We wish to express our thanks, publicly, for the cordial reception tendered us.

THE UNIVERSITY OF BERLIN AND POOR STUDENTS.—It is reported that the Senate of the University of Berlin deprecates the substitution of free study for poor students in place of the present system of allowing such to obtain instruction and attend lectures on credit. The Senate believes that such an innovation might make it impossible for the poorer men to matriculate, as they might have too much pride to accept as a gift what they now merely get on credit. This seems to us an erroneous view to take of the matter, for it is quite as galling to a proud spirit to accept a long credit, as a free gift. Students will find success twice as difficult to achieve too, if they enter life handicapped with an unwieldy debt.

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ORIGINAL ARTICLES.

ARTICLE I.

Notes on the Treatment of the Insane.

By Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, Medical Department Tulane University of Louisiana, Visiting Physician Charity Hospital, New Orleans.

The Treatment of the Insane.

We will use the term insanity in a generic sense as applied to certain morbid mental conditions produced by defect or disease of the brain, and as synonymous with mental disease, alienation, derangement, or aberration, madness, unsoundness of mind.

There are many diseases of the general system productive of disturbance of the mental faculties which, either on account of their transient nature, from their being associated with the course of a particular disease, or from their slight intensity, are not included under the head of insanity proper, which may be defined as a *chronic disease of the brain, inducing chronic disordered mental symptoms.*

The great fact to be impressed upon the medical profession, and the public generally, is that *insanity is the result of the disease of the brain, and is not a mere immaterial disorder of the intellect.* The brain is the organ through which mental phenomena are manifested, and therefore it is impossible to conceive of an insane mind in a healthy brain.

On this basis, insanity has been defined *as consisting in morbid conditions of the brain, the results of defective formation or altered nutrition of its substances, induced by local or general morbid processes, and characterized especially by non-development, obliteration, impairment or perversion of one or more of its psychical functions.*

In adopting this view, the medical profession of the nineteenth century have returned to the philosophical conclusions formulated by Hippocrates more than two thousand years ago; and the legislators of our day have wisely enacted that certificates of insanity shall be given by medical men, and by medical men alone, and to their care shall be committed those who are insane.

PROGRESS OF OPINION AS TO THE NATURE OF INSANITY.

In ancient times and during long ages, up to the writings of Hippocrates, 460 B. C., the civil and social status of the insane and their treatment were determined by religious and superstitious hypotheses; they were regarded as afflicted by the gods or possessed by demons.

Hippocrates propounded certain truths which formed the basis of the science of psychiatry. He taught that the brain was the organ of the mind, and that it was subject to physical laws and diseases like the other organs, and that insanity followed abnormal conditions of the brain.

He described disorders of the mind corresponding with mania, melancholia and dementia, denied the important bearings of heredity, and indicated the value of a study of temperaments in the treatment of cases.

The teachings of the father of medicine, based upon scientific observation, became the accepted medical doctrine, which was perfected and enlarged by such writers as Aretatus (60 A. D.), Caelius Aurelianus (100 A. D.), Galen (160 A. D.), and others.

Twenty-three centuries ago the learned physicians of Greece and Rome had emancipated themselves, by scientific induction, from the brutal superstitions of the priesthood, and they clearly and boldly taught that *insanity was brain disease with prominent psychical symptoms;* that there are bodily and mental causes; that medicinal and dietetic means of cure should alone be employed, and that all severe measures of punishment and restraint should be rejected. With the downfall of the Roman Empire, and with the decline of civilization, these humane and enlightened views were replaced by gross ignorance and superstition, and the lot of the insane became more wretched than at any previous time.

The insane were again supposed to be possessed of evil spirits, and were subjected to the most ingenious and horrible means of torture; and if they survived the free use of steel and fire, they were left to wear out their lives in chains and in foul and stinking dungeons. Thousands of them were executed as witches by brutal religious fanatics, and the insane constituted a large portion of the fifty thousand persons executed as witches or effectually persecuted to death from 1400 to 1700 A. D.

This pitiful condition of the insane continued throughout the Middle Ages down to the beginning of the nineteenth century, and it was not until long after the Reformation, and the revival of letters and science, that there was any very essential amelioration in their condition.

The sacerdotal phase of medical history that had extended from ancient Egypt and the Levitical physicians to the Æsculapian priests of Greece and Rome, and throughout the Middle Ages, finally gave way to the philosophic phase of medical science of the seventeenth and eighteenth centuries, after the appearance of Kepler and Galileo as the heralds of the advance of modern science, after Descartes had founded modern philosophy, after Bacon had aroused the thinking world by his inductive method in the study of nature, and after Harvey had published his researches on the circulation of the blood.

In Germany, in the beginning of the eighteenth century, the labors of Nasse, Jacobi, Vering, Friedrich and others of the Somatic school led to the thorough and systematic study of the somatic symptoms and to the doctrine that physical disease was the cause of insanity. The Somatic school established a belief in the curability of insanity;

a point of great importance, with reference to the general amelioration of the condition of the insane, who had ordinarily been dealt with as beyond hope of cure.

In France, Pinel, in 1792, gained great renown by the humane and fearless manner in which he removed mechanical restraints from his patients in the Bicètre, and classed insanity among the neuroses, and to a certain extent conformed to the views expressed by Sauvage (1762) in his great work, "Nosologie Methodique." Esquirol followed in the main the classification of his master, Pinel, and arranged insanity into: 1, lypomania; 2, monomania; 3, mania; 4, dementia; 5, imbecility and idiocy.

In England, Thomas Sydenham advanced the cause of medical science by advocating and practicing the inductive method of Hippocrates, and from the time of his death in 1689 to the present moment the value of his teachings and writings in all the branches of general medicine have been recognized. Cullen, in 1772, ten years after the publication in France of the great book of Sauvage's "Nosologie Methodique," adopted a similar plan under natural science methods, and classified diseases into classes, order, genera, and species. In the "Nosology" of Cullen, insanity formed order IV. among the neuroses, and had four general divisions: 1, dementia; 2, melancholia; 3, mania; 4, onceirodynia (somnanbulism and other derangements of sleep). The sub-divisions were numerous and based on symptomatological or etiological distinctions that corresponded in many respects very truthfully with clinical facts.

It is worthy of note that Pinel, who wrote some twenty years after the appearance of Cullen's "Nosology," in like manner classed insanity among the neuroses, and grouped it upon a purely symptomatological principle under four heads: mania, melancholia, dementia, and idiotism. In 1786 Arnold, of England, published a treatise on insanity, with a nosological arrangement based on Hartley's modification of Locke's tenet, that the source of all human knowledge is sensation and reflection; therefore any mental changes must be included either among sensorial ideas or the notions formed by reflection.

It would be foreign to our purpose to give an analysis of the works of Arnold, Crichton, Good and other English writers who employed Psycho-symptomatological classification and displayed both practical knowledge and metaphysic acuteness in the description of the different forms of insanity. Neither would it be possible in this brief paper to give an analysis of the works of Griesinger, Ray, Rush, Maudsley, Bucknill and Tuke, Morel, Skae, Parchappe, Voisin, Lyys, Laycock, Meynert, Sthule, Ball, Spitzka, and of many other writers who have enriched and advanced this most important branch of medical science. One of the most important objects which we have in view is to show that the scientific and humane treatment of insanity is of modern date, and in fact is one of the great achievements of the medicine of the nineteenth century.

ARTICLE II.

Some Gynæcological Work of the Past Year.*

By I. S. Stone, M.D., Lincoln, Va.

The cases here reported are from among those having been under my care during the past year, and fairly represent those usually known as gynæcological. They have been treated under circumstances most favorable to their recovery in the writer's sanitarium, and do not differ greatly from those seen in hospitals generally.

Abdominal Section.—Exploratory.—In September last, Mrs. —— was brought under my care with what appeared at first to be an ovarian tumor. She was sixty-five years of age and somewhat emaciated. The abdomen was about the size usual at the sixth month of pregnancy. Her history gave no clue to the nature of the growth. It had been observed for eight months past, and had not caused pain until recently, the bowels had become constipated and pain always followed the use of cathartics. It soon was ascertained that the growth was not in any way connected with the pelvic cavity, and was finally diagnosed as either a cyst of the right kidney or a peritoneal cyst, possibly hydatid. The patient was quite willing to undergo any operation necessary for her relief, which was accordingly done.

An incision three inches in length was made, extending more than half its length above the umbilicus, in the median line, down to the cyst, which at once proved the impossibility of its removal. Immediately upon opening it, the fæcal odor indicated either a rupture of the bowel into the cyst, or a dilated transverse colon bound by peritoneal adhesions to the abdominal wall; but at the autopsy twelve days later, it was found to be a cyst of the peritoneum ("encysted dropsy of the peritoneum"), into which the colon had opened by reason of cancerous degeneration. It was impossible to discover cancer previous to the operation, for it was only after the cyst was evacuated and an incision made lower down in the median line, that the hard and nodular infiltration so characteristic of cancer could be felt in the transverse colon. It was therefore necessary to close the lower wound, and to leave an opening through the lower part of the upper incision, so that it would answer the purpose of an artificial anus. This gave exit to abundant discharge of fæcal matter, which afforded great relief to the patient. She slowly sank from exhaustion although taking abundant food.

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*Read before the Virginia State Medical Society, at Roanoke, Va., September 5th.

The temperature did not rise above 99 2-5. The pulse not above 70, and there was no sign of distress at any time. This case is worthy of mention because of the complications rendering diagnosis clearly impossible.

Salpingitis.—Mrs. ——, æt. 38, was brought to me with the following history. She had borne six children and had three miscarriages. Post-portum hæmorrhage following two labors, also pelvic peritonitis following the birth of the last child. So great was her suffering that she had become nearly bedridden. Her headaches alone causing her to remain very much of her time in a dark room. So great was her suffering that any sound was distressing, and she had for six years been unable to have charge of her family or attend to household duties. Her left side was hyperæsthesic to a painful degree, and life had become a burden to her. With each menstruation this excellent lady had an aggravation of these symptoms. She was wearing a full length elastic stocking on account of an old phlebitis, which had followed the birth of one of her children. Vaginal examination revealed the cause of these symptoms to be diseased uterine appendages, which she consented to have removed in order that she might have another chance for life and health. The uterus was somewhat fixed in the pelvis, and pushed to the left side. Any motion of it caused intense pain. Quite naturally it was promised that the patient would get well of her nervous symptoms and pain if this disease was effectually removed. The operation was without special features. The tubes were both diseased, the left one much more than the right, and as free oozing followed its enucleation, the abdomen was washed out with hot, clean water, and a drainage tube worn for six days. The temperature two hours after the operation was 102 F., but this at once subsided and the patient had no further trouble save a bronchitis which appeared to be due to chloroform.

This patient was at once relieved, and, as Dr. Battey puts it, "bounded at once into health." She remained under my care for two months after this, and could walk for miles without fatigue before leaving.

Chronic Peritonitis following Salpingitis.—Mrs. S., æt. 32, had suffered from salpingitis for five years. She had cellulitis, as we were then pleased to term it, and after a trial of my best care, she consulted an eminent gynæcologist in Baltimore in 1884, who disagreed entirely with me as to the necessity for treatment or operation. After my return from Europe last year, she came from her western home to again consult me. The same state of affairs still existed, only aggravated by the intervening years of going from bad to worse. Chronic peritonitis was present, and the pelvic organs were glued together in a hopeless mass of exudative and adhesive inflammation.

I gave as my unqualified opinion that the patient would die unless the diseased appendages were removed, and that she was especially in danger at each menstrual period from rupture of either tube. Her friends very slowly yielded assent to my opinion, and only consented to an operation after they fully realized that she might die at any time, and *must*, in a few months, yield to the disease without surgical treatment.

My prognosis was realized at the next succeeding period, when she nearly died of an attack of peritonitis from total rupture. At the operation the peritoneum was found as thick as the skin on her abdomen, and the pelvic cavity was filled with bloody serum. The omentum was firmly bound to the intestines and tubes, and these glued over the ovaries, requiring an hour of very hard work to liberate and extract them from their bed of firm adhesions. The specimen shows the small rupture which probably occurred at that time. The peritoneal cavity was well washed out and drained, but the patient died on the fifth day of exhaustion and obstruction of the bowels. The abdomen was re-opened a few hours before death and well irrigated with hot water, but without apparent benefit.

The saline purgatives caused great distress, and were evidently disadvantageous to the patient, as they failed to act, save to cause vomiting.

This patient did fairly well until the fourth day, and I began to congratulate myself that she would yet get well, but this delusion was soon dispelled. I should not leave this case without again stating that the cause of death was the diseased and thickened peritoneum.

Salpingo Oophorectomy.—Miss ——, æt. 38, had suffered for many years from menstrual diseases. She had been subjected to Sims' operation for dysmenorrhœa with doubtful result. She had experienced a great variety of hysterical symptoms, with occasional homicidal and suicidal tendency. It would be considered by Dr. Battey as a case of *oophoro epilepsy*, as the nervous symptoms were greatly intensified at the menstrual period. She had for years been well treated by experienced physicians without permanent relief. Accordingly, after consultation with proper authority, it was decided to do a Battey's operation, hoping that she might be cured by the establishment of the menopause.

On July 5th I removed both ovaries and tubes, the operation being without any difficulty. The right tube was slightly adherent, and both specimen present rather interesting features.

This patient vomited almost incessantly for thirty-six hours after operation, and I once washed out her stomach with warm water, which gave great relief, and appeared to be the commencement of her recovery. Small doses of calomel, aided by enemas, soon opened the bowels, which were kept loose from that time, greatly to the comfort of the patient. Her temperature and pulse were scarcely above normal at any time. She was sitting in a chair in less than three weeks, and at once began walking about, and has been thus far relieved nicely of the horrible nightmare which seemed about her before. Of course, it will require years to establish the permanent results in this case.

Alexander's Operation.—Hysterorrhaphy.—Mrs. ——, æt. 50, had complete vaginal and uterine prolapse for many years. She had been bedridden for perhaps five years, and was without hope of cure. The uterus was very much enlarged, measuring five inches or more in depth. It was decided that an Alexander's operation would give her the best chance for successful uterine support. An effort was made to find the round ligaments, with only partial success. As on a former occasion, I found only the left ligament to be of any service. The right was entirely unfit to depend upon, it being much attenuated, and could be of no service as a support to the uterus.

The abdomen was opened by means of an incision extending from the right external ring vertically two inches. Through this the uterus was found, and drawn upwards by means of a finger under the broad ligament, and a No. 3 silk suture passed through the broad ligament close to the uterus, and brought out through the sides of the abdominal incision and tied under the integument, immediately upon the tendon and fascive of the external oblique. The silk was cut short and the rather large flap closed over it. I permitted a short rubber drain to remain in the wound for forty-eight hours, which prevented its entire closure by primary union. This, however, delayed firm union for a few days only, and the patient sat up and was taken to her home in two weeks.

This operation, so far as its immediate result may be considered, was excellent. There was no rise of temperature worthy of mention. But I learn from her physician that she is still an invalid ; not from the prolapse, which is cured, but because she is a bedridden woman, with the habits of an invalid, and nothing less than proper moral management, combined with the treatment by massage and electricity, with over-feeding, will cure her.

Various operations upon the cervix uteri, vagina and perineum have been performed which require no special mention. Emmet's operation is not so frequently done now as when first given to the profession. In my hands it is still found of great value, but during the past few years it always appears necessary to curette the uterus before closing the tear. This will aid generally in curing the menorrhagia and leucorrhœa which nearly always accompany this lesion. Amputation of the neck of the uterus for cancer is rarely justifiable, so far as my experience goes, for the reason that most cases are not diagnosed as cancer until too late for a successful amputation.

Operations for lacerated perineum are still required, because obstetricians do not attempt immediate repair.

Perineorrhaphy is no longer, of necessity, the most difficult operation in the domain of gynæcological surgery, but may readily be done in but few minutes by the so-called "Tait method." I cannot think a moderate tear of the perineum can do much harm, and hence do not frequently resort to this procedure ; but if needed to cure or prevent cystocele or rectocele, it is of great value.

Goodell's method of dilatation for cervical stenosis, and obstructive dysmenorrhœa is, in certain cases, valuable in relieving pain. One case, after a week under my care, during which the dilatation was done, has been relieved of pain almost entirely for eight months. In no case has there been inflammatory trouble afterwards, and in nearly all great relief. I am not enthusiastic enough to say it is infallible, as I deny that there is really stenosis in very many cases ; but that women are relieved whose cervical canal admits a sound size of a No. 7 American catheter I do affirm. Yet surely there is room enough in these cases for menstrual blood to escape. The solution of this I must not enter upon here, save to claim that its effects are due to the impression made upon the nerves of the canal, especially those near to the internal os.

One case of chronic cystitis resulting from tubercular kidney is worthy of mention. The treatment extended over a period of three years. The evidence of disease in the kidney could not be positively demonstrated, although very high authority was invoked in consultation. The microscope afforded no evidence that the abundant pus and epithelium found in the urine was from the kidney. In November last, I made a careful exploration of the right kidney, through the usual lumbar incision used in nephrotomy, and found malignant disease, which at the time I thought to be sarcoma. The capsule was very adherent, and the substance of the kidney now assuming the appearance of a morbid growth, was very hard, so that a needle could with difficulty be forced into its substance. The patient had no bad symptoms immediately following this exploration, but in four months she died of asthenia. The growth proved to be tubercular as certified to by Dr. Kemp of the Hoagland Laboratory, Brooklyn, also Mr. Leopold Hudson, of Middlesex College Hospital, London, my teacher of pathology. For the want of time and space, I will not mention other cases requiring surgical treatment during the year, but would call attention to the fact that the larger number of gynæcological cases require other than merely surgical treatment. Nor do I, on the other hand, advocate the claims of the so-called conservative school, composed of those who claim the various disorders of women are susceptible to treatment by drugs alone. It is equally unphilosophical to assert that any method such as for instance the treatment by electricity on the one hand, or purely surgical treatment on the other, is capable of affording positive relief to the various disorders of women. I will not here speak of the claims of Apostoli's methods, save to say that very many of his followers are with untiring zeal far ahead of the inventor himself in urging the claims of electricity as a panacea in pelvic diseases. There is surely a field of usefulness for this mysterious agent, but it will almost certainly be found of greatest service when some lesion of the nervous system demands its application.

There are in all hospitals as well as in the practice of all gynæcologists very many poor and suffering women, who have dysmenorrhœa, and dilating the cervix will not cure them. There are many displaced wombs, and pessaries do not support them. There are many neuralgies and ovarian pains which no operation can cure. There are even cases of salpingitis which, though perhaps to be cured by operation (but not without danger), and which the possessor will not permit to be operated upon, while they are not positively invalids and unable to perform their daily tasks, which nevertheless require treatment.

It is these cases and even far simpler ones, which abound in our land to-day, and which we all are daily seeing, and which demand intelligent, yea, even skillful treatment, yet without finding a place in a report like this. They go to make up a large part of the gynæcologist's work, and reflect but little of the *eclat* usually following the purely surgical triumph.

It is in these cases that the Weir Mitchell method of treatment finds its most useful application. Were it not too great a trespass upon your time, I could cite many cases where persistent pain, in or near the ovaries, was cured by massage and electricity. Cases of subinvolution of the uterus and vagina, perimetritis, etc. Very many women who have been unable to walk or stand without pain, who cannot submit to digital examination without great suffering are, in the absence of real pelvic inflammation or abscess, generally to be cured by mechanical methods, moral management, overfeeding and exercise given by the nurse. I am exceedingly anxious to be on record as opposing massage of the pelvic organs, as practiced by Brandt and his followers. It is without doubt possible to cure some cases or relieve others, by the liberation of adhesions. But there are very many cases on record, and perhaps as many not recorded, where a single bimanual examination caused the rupture of a pus tube, or other abscess, and thus killed the patient. It is plainly impossible to know how easily this accident may occur, and consequently I would limit the use of massage as thus applied, to those who are always prepared to operate for pyosalpinx or perhaps worse than the acute septic peritonitis. It looks altogether improbable that any amount of massage would have made healthy the specimen here exhibited.

NOTE.—I wish to add to this report my thanks to Drs. Keen, Nichols, J. W. Taylor and son, Luck, Settle, Willard, and Fishburne, for presence and assistance in these and other operations during the year. I am also indebted to Dr. Jos. Taber Johnson, of Washington, for consultation regarding the case requiring salpingo oophorectomy.

ARTICLE III.

ÆTIOLOGY OF STERILITY IN WOMAN.*

By E. S. McKEE, M.D., Cincinnati.

Your essayist first essayed to write a paper on "Sterility in Woman." In taking a preliminary glance over the field, he found he was undertaking a book. Having some regard for the feelings of his hearers, he limited the title to "Its Ætiology and Treatment."

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* Read before the Mississippi Valley Medical Association, September 10, 1889.

The mariner wending his way over the wide ocean is accustomed, now and then, to take observations to find what progress has been made, or how far, if at all, he has drifted from his proper course. So with us is it wise, from time to time, to consider what we have done, even though the way we travel may be well-worn and apparently barren and unfruitful.

It is only in rare instances that the lack of descendants is not sooner or later regretted by both husband and wife, and it often proves an open door to marital discord and reproaches, with all their evil consequences. Sterility among the old Romans and Israelites was sufficient cause for dissolution of the marriage relation. Instances of human sterility due to want of sexual harmony are exceedingly rare, and most cases supposed to be of this nature can be otherwise explained. The ætiology of primary sterility is often "shrouded in darkness," and the successful treatment of the same past finding out.

Sterility in man must necessarily be eliminated before we can hope to discover the source of unfruitful marriages in women. Cross has proven that man is not able to beget children in almost all instances, as formerly believed. His statement that one case in six is due to sterility on the part of the male is probably too strong, yet it is not greatly wide of the mark. Kehrer, after a series of carefully conducted experiments, has arrived at the conclusion "that in at least a third of the causes of sterile marriages the husband was the party at fault, and gonorrhœa the cause of the barrenness."

The most frequent origin of sterility is, perhaps, intra-uterine disease, and chronic endometritis is its usual manifestation. This disorder gives rise to the characteristic gelatinous discharge, thus hindering the ingress of the spermatozoa by destroying their vitality. Endometritis renders the mucous membrane unfit for the fixation and development of the ovum. This diseased condition of the intra-uterine mucous membrane may extend into the Fallopian tubes and obliterate their orifice, so as to prevent the admission of the spermatic fluid. It is well known that constitutional causes, more especially the scrofulous diathesis, have much to do with these inflammations. Also cold and heat, over-feeding and under-feeding, youth and old age, decline of general health and confinement.

Diligent study of the subject of sterility demonstrates that inflammations of the pelvic peritoneum and of the parametria, or rather their consequences, are among the most frequent causes of sterility.

Anatomical researches often finds such considerable adhesions between oviducts, ovary, uterus and rectum that conception would be an absolute impossibility, yet other adhesions exist which might not prevent impregnation.

Three questions are to be determined: 1. Are spermatozoa in the semen? 2. Do they get into the utero-cervical canal? 3. Do the secretions in the canal poison the spermatozoa?

Levy, of Munich, made microscopical examinations of the conditions of the spermatozoa at different intervals after coitus in sixty women who were under treatment for sterility. In fifty-seven catarrh was present. In all of these cases only a small number of spermatozoa were found within the uterus, and they were all motionless within five hours after coitus. In healthy women he had found that the movements of the spermatozoa within the uterus continued for at least thirty-six hours.

Venereal diseases have their share of influence, and the gonorrhœal affection is a potent cause of sterility, but it is by no means proven that syphilis has any unfavorable influence on conception, though the frequent abortions due to this or other causes may have this effect. Syphilis is often associated with gonorrhœa, which is the real cause. Gonorrhœa often prevents conception by the inflammation traveling up the womb along Fallopian tubes, which renders the covering of the ovaries thick and tense, so that the ovum cannot escape, or if it does, the fimbrinated extremity of the tube is so agglutinated that it cannot rise up to grasp the ovum. The extreme views of Noggerath, that the wives of men who have had gonorrhœa, as a rule, remain sterile, have not been extensively accepted by the profession. The truth is, if gonorrhœal salpingitis results, sterility follows.

Reflux of semen after coition was described as cause of sterility by Hippocrates and Soramis, and is probably a frequent cause, though many women must base their complaints on a delusion. This *profluvium seminis* is rarely complained of except by the sterile, and is infrequent among the febrile. It is also believed to be common among those sterile women who have no sexual pleasure. It is probable that the mucous discharge of the glands of Cowper and Duvernay are in some cases mistaken for semen.

The vaginal secretions, under certain pathological conditions, become so acid that it induces sterility. Women who suffer from severe vaginal catarrh are frequently sterile, the spermatozoa being found dead in the vagina some hours after copulation, though examination after a shorter period revealed them still alive. This vaginal secretion, the materii peccans, may also act in a mechanical way. In cases where conception occurs despite a very acid condition of the vaginal secretion, it is probable that some of the spermatozoa enter the uterus before the secretion has time to act on them, or possibly the spermatozoa, being injected in a mass, the acid secretion is unable to penetrate and kill all of them. The state of the nutrition in women, as in plants and animals, has long been known to have this tendency.

The connection between sterility and obesity has been explained by some as the result of the direct pressure of the fat upon the ovaries. The more plausible theory is that the extensive disposition of fat detracts from the developmental process in these organs. The interference with menstruation often observed in fleshy persons bears out this theory. It is probable that the ovaries are not organically affected by this condition, as the normal menstrual flow generally returns when the obesity disappears. Examination of the ovaries under chloroform in obese persons will show those organs intact, so it is probable that sterility is indirectly caused by this condition, by the hindrance to the expulsion of the ova, and not their development. The injurious influence of excessive flesh in women, as regards child bearing, is universally admitted, and is corroborated by experience with plants and the lower animals. When obesity attains a condition of polysarcia it has a great influence on generation. In the male its early development checks the growth of the genital organs, and if late, diminishes sexual desire. The accumulation of fat in the abdomen is claimed by some to exercise an injurious pressure on the utero-ovarian apparatus. The hypertrophied condition of the external genitals may form a mechanical hindrance to impregnation. Given an obese woman, we will generally find that the prospects for offspring will depend more upon the menses than upon the amount of fat, amenorrhœic fat women being usually sterile. Statistics show a diminished fertility during famine, but it is only ephemeral. Thinness only affects fertility when it is dependent upon some chronic disease.

The luxurious habits and over-feeding of the wealthy diminish fertility, while this condition is favored by the life of the poorer classes. The relative fertility is stated by Marshall Hall as six to one.

Chlorotic women often conceive, and sterile women just as often show no other cause for their sterility than chlorosis. Scrofula probably by its effect on the general system, leading to deficient development of the entire body, genitals included, may be productive of sterility. Tuberculosis is probably, in all except its later stages, without influence on sterility in women. It evidently does diminish sexual potency in the male, and for this reason is largely attributed to the female. By causing general constitutional disorder and a chronic inflammation of the ovaries, it probably does occasion a certain amount of sterility, Yet we see numerous instances of parents addicted to the abuse of alcohol who have large families of children.

Carcinoma cervicis uteri is an important obstacle to conception When the growth has advanced to any degree, even if confined to only one wall, the cervical canal is mechanically stopped, and the corrosive fluid which accompanies ulceration has a deleterious effect upon the sperm.

The higher education of women has been held to be a factor in the production of sterility, but nothing certain has been proved in this direction.

Ovulation is doubtless more frequently performed in some women than in others. Some conceive with more or less regularity every fifteen to eighteen months, and others at intervals of several years.

Dysmenorrhœa among the fertile is comparatively uncommon. Nearly half of the sterile women suffer from this disease. The association of this neurosis with sterility is not unimportant. We often also have the return of semen and derangement of sexual organs or coitus, and the cure of the dysmenorrhœa is a direct step towards the cure of the sterility. Some claim that two out of five cases of sterility are accompanied by spasmodic dysmenorrhœa. Emmett shows us in his tables that of all married women who suffered pain at puberty, seventy per cent. were sterile.

Physiologists tell us that the healthy spermatozoid in a normal vagina may live and retain its vitality for seven or eight days. That its lateral diameter is 1-4200 of a inch, and that it will be able to penetrate any orifice through which a red blood corpuscle can pass. Its rate of travel is about 7½ inches an hour, sixteen feet in a day, and thirty or forty yards in a lifetime. These facts would lead us to doubt if long or narrow or ante or retro-flexed cervices could primarily have anything to do with sterility, and that the condition of the secretions has great influence.

Vulvar or vaginal hyperæsthesia, inflammation of the carunculæ myrtiformes, undue shortness of the vagina, unless great care is exercised by the husband, will induce dysspermasia and may bring about sterility by favoring the formation of a copulative sac outside the axis of the uterine canal, and consequent maldirection of the semen.

Infantile uteri and other malformations are frequent causes. Malformations of the vaginal portion often prevent conception in women as well as animals.

A Chicago professor stated in a clinical lecture that his observation had been, that in sterile women the hair on the mons veneris was always straight. That curling the hair would cure the sterility was not demonstrated.

Premature and post mature marriages seem to tend to sterility.

The infertility of heiresses is well known, and if inherited sterility be not a contradiction of terms, this fact demonstrates its possibility.

The female being less passionate than the male, the orgasm results later with her, or the male orgasm occurring so soon she may not reach that stage at all. If both were simultaneous, it is reasonable to suppose that conception is more liable to occur.

Sexual incompatibility is well known to exist; prominent examples being Augustus and Livia, Napoleon and Josephine. A case is reported by Duncan where a man married successively three childless widows and had children by each, and another where a woman is married during child bearing limits to three men successively, and has children by but one. Sterility from sexual incompatibility cannot be foreseen or prevented, and religion, morals and law interdict the cure which might result from a change of husband. Among some classes, in Wales and Scotland for instance, custom permits and local morals do not condemn a practice which produces many illustrations of this mutual incompatibility. This practice is called "bundling" or "keeping company," and consists in permitting young girls to cohabit with an eligible man with the understanding that if pregnancy ensues the legal marriage tie is made. Progeny not resulting, the woman is deserted by her friend and falls to another with whom the result may be different. Want of sexual unity, the so-called relative sterility, is the condition in which long and regular cohabitation between two individuals remains without result, though each one can procreate with other persons. Some long sterile marriages are dissolved, and both man and woman produce children in another union.

Duncan has found that relatively more women who marry between the ages of fiteen and twenty are sterile than those who marry after twenty.

Sexual sensations, lack of participation or feelings, seem to have no special influence on conception. Many women who have no passion conceive rapidly—others, who have, may not conceive at all. Dyspareunia or frigidity does not play an important role in sterility, though they doubtless have a bearing in some cases. Among prostitutes the frequent delay of menstruation, then abundant hæmorrhage, is in many cases only habitual abortion and leads to changes in the genitals which must result in sterility. The effect of nervous or psychic influence on sterility through its suppression of the menstruation merits further investigation.

The Druidic College of the twelfth century considered tannin a most potent cause of sterility, hence excessive tea drinking might act in the same way. Sulphur is also believed to have the same effect.

Such dislocations of the cervix may occur that instead of lying in a pool of semen as it should, it is above, in front or away from it, and this may prevent conception. Sterility can be occasioned when necessary by obliterating the uterine extremities of the Fallopian tubes with the thermo-cautery.

The universal prolificness of the human race in Arkansas is well known. When you ask down there why they have so many children they reply that the mosquitoes are so bad that they cannot sleep at night. That mosquitoes are a stimulant to reproduction is hardly proven, but that they act indirectly is firmly believed in Arkansas.

Nantagazza, Boudin and Balley wrote that consanguineous marriages tend toward sterility. Darwin, after a most careful investigation, using as his guide Burke's "Landed Gentry" and "Peerage," finds that consanguineous marriages are slightly more fertile than non-consanguineous. He is of the opinion that this is because marriages between first cousins is more apt to take place, when there is a large group of persons who bear this relationship to each other, and thus fertility becomes hereditary. The alleged infertility of consanguineous marriages can not be substantiated.

SELECTIONS.

RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF THE STOMACH.

The process of taking stock, of finding out the exact amount and nature of our possessions, is at least as valuable in the mental as in the physical world. In a paper read before the Medical Society of Munich, on December 4, 1888, Stintzing has done this important work for the department of diseases of the stomach. After a critical examination of the various methods of testing the functional capacities of the viscus, he propounds the only question of interest to practical physicians: What have they taught us?

In the first place, as he tells us, we have learned the paramount importance of hydrochloric acid in the act of digestion. It is not so long since pepsin was regarded as the panacea of every gastric trouble, whereas we are now well aware that in the gradual disappearance of the digestive agents pepsin never takes precedence of hydrochloric acid. We have learned to recognize the two extremes of anacidity and hyperacidity, and for a time were inclined, in accordance with the researches of Von den Velden and Riegel, to regard the former as pathognomonic of carcinoma. Although we are now aware that hydrochloric acid may be absent in other morbid conditions, such as dilatation without carcinoma, motor insufficiency, chronic catarrh and atrophy of the mucous membrane, yet its absence in carcinoma is a diagnostic point of the greatest importance. For example, the differential diagnosis between simple ulcer and carcinoma is now rendered a comparatively easy matter, since hydrochloric acid is never absent in the former disease. On the other hand, Stintzing declares that he has never found it in carcinoma, but does not state in how many cases of the disease he has tested the gastric secretions.

The symptom called pyrosis has long been recognized as due to hyperacidity, although the nature of the acid or acids causing it was, until recently, unknown. It is now established that there are two varieties of pyrosis—one depending upon an excessive secretion of hydrochloric acid, the other upon organic acids caused by abnormal fermentations. For the former, Sticker has proposed the term pyrosis hydrochlorica. Hyperacidity is a frequent though not an invariable accompaniment of gastric ulcer.

The new methods of research have enabled us to distinguish from hyperacidity a condition of hypersecretion, by which is meant the secretion of gastric juice by a fasting stomach. This condition is by no means fanciful, but is a well-recognized and serious pathological aberration. According to Riegel, there may be withdrawn from a hypersecreting stomach, during a fasting interval, as much as a pint of acid fluid capable of digesting albumen. The causes of this condition, which were discussed in the *Medical News*, October 1, 1887, are not fully known, although it is probable that they often have their origin in the nervous system. In support of this view, it may be mentioned that Sahli has observed a hypersecretion of gastric juice during the gastric crises of a tabetic patient. The condition of hypersecretion may, therefore, be either transient or permanent, and in the latter event is generally associated with dilatation. In the first thirty or forty-five minutes of digestion the acidity of the gastric juice is caused by lactic acid. If this acid appears in later stages of the process, its presence is caused by undue detention of food or by deficiency of hydrochloric acid. The tests for lactic acid are, therefore, of importance in the diagnosis of diseases of the stomach.

Studies of the milk-curdling ferment, the labferment of the Germans, have lately been instituted by Johnson, Klemperer and Boas, and the latter has shown that as pepsin is preceded by propepsin, so is the labferment by labzymogen. The latter is developed into the former, and acquires its milk-curdling property by the action of hydrochloric acid. Labferment is always present in the stomach, except in high degrees of atrophy, and even in these its forerunner, labzymogen, may be found. The diagnostic value of the absence of this ferment is no greater than that of hydrochloric acid, on the action of which, as already stated, it depends for its existence.

The absorbent power of the stomach may be tested with iodide of potassium, which was first employed for this diagnostic purpose by Penzoldt and Faber in 1882. Three grains of iodide of potassium are given in a gelatine capsule, and the saliva, which has been previously shown to be free from iodine, is tested for this substance. If the stomach is healthy and empty, the first iodine reaction appears from six and one-half minutes to eleven minutes. If the capsule be swallowed immediately after a meal, the reaction does not appear until from twenty to thirty-seven minutes have elapsed. According to Stintzing, it may not appear, under these circumstances, until forty-five minutes after the capsule has been swallowed. In dilatation of the stomach, in cancer, ulcer and chronic catarrh, the absorbent power of the stomach has been shown by this test to be diminished.

The digestive and absorbent powers of the stomach having been tested, the examination is completed by acertaining its motor ability. Until quite lately, the only means of determining this point was based upon the fact that a healthy stomach has discharged its contents into the intestine seven hours after a meal. If the stomach was proved to have emptied itself in that time, its motor function was assumed to be normal. Such a method, however, gave no reply to the question whether the gastric peristalsis had begun at the proper time.

Quite recently a drug was discovered, or rather invented, the chemical properties of which rendered it singularly valuable as a test of the motor function of the stomach. This drug, which is salol, is insoluble in the acid secretions of the stomach, but dissolves in the alkaline fluids of the small intestine, in which it breaks up into its component parts, phenol and salicylic acid. The latter is excreted with the urine, in which it may be recognized by testing with chloride of iron. In health, according to Ewald, this reaction may be obtained in from thirty minutes to one hour after the ingestion of fifteen grains of salol; whereas, in cases of gastric dilatation, the reaction, as a rule, does not appear until from ninety minutes to three hours after the same dose. These figures, of course, include the time occupied by the stomach in propelling the salol into the duodenum, plus what is necessary for the salol to be decomposed, absorbed by the portal vessels, pass the barrier of the liver, enter the general circulation and be excreted by the kidneys. Ewald and Sievers, by experimenting in a case in which colotomy had been performed, determined this latter period to be between twenty and thirty minutes. By subtracting these sums from the average time in which the urine reaction is obtained, viz., forty-five minutes, it would appear that the time necessary for the healthy stomach to expel a dose of salol into the intestine is from fifteen to twenty-five minutes.

This salol test can scarcely be called clinical, for, apart from the delicate nature of the urine test, which is a part of it, it is impossible for most individuals to pass their urine at intervals sufficiently short for the object in view. On these accounts Stintzing has attempted to apply the test for iodine in the saliva to the determination of the motor function of the stomach. He administered iodide of potassium in keratin pills—which are, theoretically, insoluble in the stomach—and tested the saliva at intervals for iodine, just as is done in testing the absorbent function. At the first experiment the iodine reaction appeared in exactly the same time as the salicylic acid reaction in the urine after the ingestion of salol. Stintzing, however, conceived the happy idea of examining the stomach contents for iodine, and found it present. It might have been swallowed, and therefore, in a second experiment, as soon as the first traces of iodine appeared in the saliva, he withdrew the stomach contents, and found the iodine reaction to be much stronger in them than in the saliva. The method is, therefore, inapplicable to the object in view, and the experiment demonstrates that, as already suspected, keratin pills are not insoluble in the stomach.

The latest test of the motor power of the stomach is that just presented by Klemperer. This experimenter introduces into the empty stomach 26 drachms of olive oil, and after a certain time washes out what is left in the viscus. The deficit determines the motor capacity. Under normal circumstances the stomach discharges from 18 to 21 drachms of the ingested oil into the duodenum in two hours. In cases of chronic catarrh, only from 6 to 11 drachms out of the 26 were emptied in the same time, and in a case of atrophy only 6½ drachms. Supposing it possible to wash out all the ingested oil, Klemperer's test is the most accurate yet employed; but the question arises whether the behavior of the stomach toward a quantity of oil so great as virtually to constitute a foreign body is the same as toward the ordinary nutritious substances. The difficulties in the way of the general clinical use of this test are also, it is needless to say, insuperable.

The most important results of modern gastrological research have now been enumerated, and it must be admitted that the array of precise therapeutic indications which they furnish is unequaled in any other department of medicine. Nearly forty years ago one of the greatest clinicians of Germany gave utterance to almost hopeless views concerning future progress in the knowledge of diseases of digestion. Through the methods above outlined, and especially through the use of the sound, this pessimism of Frerichs has been shown to be without real foundation.—*Medical News.*

COMPLICATIONS FOLLOWING ABDOMINAL SECTION. By J. M. Baldy, M.D.*

The attention of surgeons, in the past and at present, has so commonly and almost exclusively been called to the perfection of the different abdominal operations, that sight is lost of the possible complications which may follow; or, if noticed at all, they are kept locked up in the bosom of the individual himself, and the profession at large hears and consequently knows very little about these annoying and at times serious results. In consequence of this, medical men are continually running across these patients and are having their faith in the value of the original operation shaken. Most men go into an operating-room, see the operation, have a pathological specimen shown them, and then go away, satisfied as to the justifiability of the operation, and confident as to the results. They may or may not see the patient several times during the treatment, but are generally satisfied with an inquiry as to how the patient is progressing, and finally have the satisfaction of hearing that she is well and has been discharged. The case is probably reported as cured in some society or medical journal, and thus the favorable statistics are swelled, and inexperienced and untrained men are led into attempting the operation, usually with the result of sacrificing several lives before they are frightened off.

It is about time for surgeons to look at and seriously study some of the dark sides of abdominal surgery; for a dark side it certainly has. Our results, as far as removing disease is concerned, are about perfected; let us now turn some of our energies into preventing or alleviating some of the after-complications, which are in many cases as bad as the original disease itself; probably not causing such immediate danger to life, but producing symptoms just as hard to bear, as far as the patient is concerned, and practically, to her belief, fully as bad, at times, as her former trouble.

When I first began to turn my attention particularly to gynæcological surgery, especially the abdominal variety, I was considerably worried that my cases did not always run as smooth and uncomplicated a course as I had been led to believe those in the hands of my friends and others did. That they were not perfectly well when they got up, and came to me sometimes for weeks, complaining of one thing or another, was a source of great mortification to myself; and, finally, I began to find that troubles continued and others appeared which it was extremely difficult to control. At first supposing that I was the only one so afflicted, I thought there must be something radically wrong, either with my operations, or with my handling of the case afterward; and yet I could not reconcile these thoughts with the fact that I usually had the very best of assistance at the operation and the constant advice of most competent men in the conduct of the after-treatment. Now I am constantly seeing and hearing of cases with similar troubles as my own, and some with complications I have never personally met with. These cases are by no means confined to the practice of any one man, or any class of men; but represent patients of nearly every prominent operator in this city. Nor do I think that these results are confined to Philadelphia, but will be found wherever abdominal surgery is practiced.

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* Read before the Philadelphia Obstetrical Society, March 7, 1889.

To fully consider the causes, prevention, and cure of these complications is beyond the scope of this paper; my object being simply to call general attention to the prevalence of their existence and to make a few remarks on the most frequent of them. Some of the subjects have been, from time to time, noted by other surgeons, and have been called to the attention of the profession, only to be dropped, almost as if they were subjects not to be handled and publicly discussed. Among the most frequent of these might be mentioned hernias; simple fistula-tracts; fæcal fistulas; pain, pelvic or abdominal; œdema of the lower extremities. I have seen my patients suffering from all of these troubles, and have had some of them follow in my own practice.

Holmes has found that he had thirty per cent. of hernias following his operations. Now, as these cases were for the most part hospital patients, he could certainly not have kept track of them all, and so, if the whole truth were known, the per cent. would be much higher. It would seem at first sight that a patient developing a ventral hernia would return for treatment; but not so, for in my own case, with the exception of one patient, none of them ever reported, and I only discovered their existence from outside information. Thirty per cent. is, I think, a fair average of hernias following section. Most of the operators with whose work I am familiar have, I am confident, almost if not quite that proportion. I know of many cases in this city, of which the operator himself is not yet cognizant. Now a ventral hernia is by no means a harmless thing. I can recall women who suffer almost as much from the presence of the hernia as they did from the original disease; in fact, more so. One case I know of had originally a small unadherent ovarian cyst, found in the course of a general examination, and which gave her few or no discomforts; she now has a good-sized ventral hernia, from which she suffers considerably. These hernias constantly tend to increase in size, and when the woman is one who must be on her feet constantly, carrying heavy burdens, lifting heavy weights, or, in fact, doing anything which will increase the tension at the abdominal opening, the result must invariably be a rapid enlargement of the protrusion, with all the accompanying distresses. There is no good reason that some of these cases should not eventually, from various causes, become strangulated, and require a second and more serious operation; this has actually occurred.

The mere protrusion and displacement has caused so much trouble that an operation has been devised for the closure of the opening. The causes of hernia have been somewhat a matter of dispute; some contending that the drainage-tube is most at fault, while the advocates of the tube repudiate that idea. Then again improper suturing is charged with the results. Whatever the cause, the lesion is certainly a lack of union of the muscular tissues and the deep fascias; the remedy is plainly that of securing perfect apposition of the edges of these tissues. Time is frequently, in an operation, a most important element, and there is no need of wasting it by passing a separate row of sutures in the peritoneum itself, as has been advocated and practiced in some of our neighboring cities. The peritoneum always unites, and does so in a very short time. As far as I know, it has never failed to do so, excepting in those cases where the whole incision failed. The hernia is always found to have a covering of skin, superficial fascia, and peritoneum.

It seems to me that a continuous catgut suture of the muscles and deep fascia is all that is needed beyond the usual, all-the-way-through suture. I can recall a case where the presence of a hernia, by demanding an operation for its closure resulted in the death of the woman,

This city now contains a large number of women with fistulous tracts in their abdomens. Some of them have followed drainage, and others have been produced by abscesses rupturing through the incision, and the track never closing again. The extra-peritoneal method of treating the pedicle in hysterectomy is a very frequent cause. The length of time it takes the clamp to come away is often so great as to leave an opening which constantly discharges pus—in small quantities it is true, but yet enough to be exceedingly annoying and uncomfortable. I have had two such fistulas following hysterectomy, and neither of them have I yet been able to cure; the one now gives fair promise of soon closing. I have, fortunately, had no other fistula tracks following my operations.

One case I know of was a few years ago operated on for some pelvic trouble, and after a few weeks the patient was sent to her home, with a drainage-tube (rubber, I think) in her abdomen. The surgeon lost sight of her, and the tube being neglected soon became most foul. The case afterwards drifted into one of our large general hospitals and there died.

Another case was operated on for a pus-tube; the second tube and ovary, being apparently healthy, were left *in situ*, but these afterwards took on disease, and a second operation failed to remove it. A third operation was undertaken by another surgeon, with what result was never known but by a select few; certain it is that a fistula-track followed, after a severe illness. This woman, also, finally found her way into one of the general hospitals and was miserable enough to die, if she did not do so; what finally became of her I do not know.

A third case had one side of a double tubal trouble removed, and the drainage-track never closed. I saw the woman, a year or more after the operation, on her death-bed. The track was discharging pus freely, and always had done so; before her death, fæces were also finding their way through the opening, a slough having evidently come away from the bowel. A fourth case, after everything else had been done without success, had a counter-opening made into the vagina by another surgeon into whose hands she had fallen. The operation also unfortunately opened the bladder so high up that it was impossible to repair it. She has now a vesico-vaginal fistula in addition to her other troubles, and at last report was in a dying condition. And so I could go on with case after case, some as bad and some not so bad; but, at its best, a fistula is a most miserable complication, and too much attention cannot be given to their prevention.

If the drainage-tube is not responsible for the hernias, it certainly is for a large number of the fistulas; and although I am a firm believer in the great benefits to be derived from free drainage, I fully realize its disadvantages, and often wonder if it could not be done away with oftener than it is. The great prevention of the formation of these fistulas is to prevent abscesses forming and the necessity of their subsequent discharge—if they do form, it is better to go boldly in and empty them at once, than to wait and have them open by a slow, tedious, and uncertain process, which may not be brought to an end before the patient is—the avoidance of the unnecessary use of the drainage-tube, and when it is used, the most careful attention to its cleanliness, and its early withdrawal. I believe a permanent track results oftener from an unnecessarily prolonged use of the tube than from any other cause.

Fæcal fistulas are not so common, and yet enough of them occur from time to time to be a warning of the danger of their production. When they do occur, they are usually so deeply seated and so bound around by inflammatory products that they cannot be reached; and if they are reached, as a rule, require one of the most dangerous and difficult operations in the whole range of abdominal surgery. I can recall a number of these accidents. One could not be reached after an extended trial , and the whole incision was closed up in order that the patient might die as quietly as possible ; this she did not do, however, but lived in spite of everything, and the track afterward closed of its own accord.

Another case required the most constant and careful irrigation, after an unsuccessful attempt had been made to reach it to save the woman's life.

And so they go ; if an attempt is made to close them, a great risk is taken ; if they are let alone and do not close spontaneously, the patient had better be dead. The usual cause, as far as I have been able to observe, is intestinal adhesion to diseased organs. Often after tearing a loop of gut loose, I have returned it in fear and trembling, lest a piece at the point of adhesion slough out and give me a fæcal fistula. The prevention is the greatest care in tearing loose each adhesion, and a most careful attention to the after-treatment. When they occur, they are best left alone.

A continuance of pain, or the appearance of a pain not before present, following abdominal section, is so common that every one engaged in this kind of surgery must have noted its frequency. This pain is usually not very severe, but is of a constant nagging character

—such a one as to so constantly wear on a woman's nervous system that it soon renders life a misery to herself, and her a burden to every one around her. At times, however, it assumes a severe character and becomes almost unbearable. I have known of a large number of such cases, some of which required an operation for their relief.

In two cases of this kind, the only lesion found was an adherence of the omentum to the abdominal incision, the freeing of which cured the pain. Many others are now going about, suffering as much as they did before the operation. Most of this pain is, I believe, due to adhesions formed between the omentum or intestines and raw surfaces left by the operation, and the subsequent dragging on these points. This would seem to be true, as most of the cases which I have known of and which were operated on and the adhesions released have been cured or nearly so.

I also think that the adhesions in the original disease oftentimes cause most of the suffering; this is especially so in the pelvic cases. From these same adhesions we have sometimes an obstruction of the bowels, either at once or later, after convalescence, and causing death in consequence. I can remember several cases of this kind which could be explained in no other way, and, in fact, some of which were demonstrated to be so by a post-mortem examination. The remedy for their formation and all their attendant danger and discomforts is to keep the bowels moving, so they can have no chance of adhering. The best way of accomplishing this is by purgatives, and by the non-use of opium. Fortunately, the indications for purgatives are so many and so constantly present, that they can almost always be used.

Œdema of the lower extremities I have a number of times seen; sometimes only temporary, but at others of long enough duration and severity to be of considerable annoyance and worry to both patient and surgeon. In my own practice this has occurred several times, but has always eventually cleared up.

When every person about to undergo an abdominal operation must run the guantlet of all these complications, as well as many more mentioned, it becomes a serious matter in deciding for or against an operation. We have here more than the immediate risks to life to consider—we must think if the patient has his or her present disease removed; will she be any better off, or may she not be the worse for the interference? At any rate, such a state of affairs should be a warning to inexperienced men not to be misled by the brilliant reports seen in the journals, and not to rush thoughtlessly into an operation, expecting to produce the same results. They should know that, as a rule, only favorable cases are reported, and that men do not like to publish to the world their bad work or misfortunes. Abdominal surgery is by no means the simple, easy procedure some men would make us believe; and such an operation should never be undertaken except after the most careful consideration of all the risks that must be run, the chances of benefit to the patient, and in the presence of actual demonstrable disease. Until the dark sides of abdominal work are well known to the profession at large, the *furor operandi*, which has been so justly complained of, will continue, and many women will succumb to the results of inexperience.

BIMANUAL EXAMINATION OF THE FEMALE PELVIC ORGANS.—Arthur V. Macan, M.D., in *Med. Press and Cir.*

My contact with men from all parts of the world has led me to the conclusion that the bimanual examination of the female pelvic organs, though practiced by some specialists, is practically unknown to the great mass of our profession; indeed, I think I may go further and say that not only is it not practiced by the profession at large, but it is difficult at first to get most men to believe in the accuracy of the diagnosis that it renders possible. It is not till they find that with a little practice they can themselves feel the ovaries in every case, that their skepticism is removed. But the bimanual examination of a case is not considered exhausted by us until we can not only feel the ovaries, but can also determine their size, shape, consistence, tenderness, and mobility, and also the condition of the ovarian ligaments. Next the posterior or utero-sacral ligaments have to be palpated, and finally the fallopian tubes. Till a man can feel the ordinary healthy fallopian tubes in all cases where the conditions are favorable, we do not think he has made much progress in the bimanual method.

Of course if the conditions are not favorable for this method of examination we must be content with a less accurate diagnosis. One thing I think I may say is essential, that the examination be made with the patient lying on the back.

I wish more especially to draw attention to some methods of treatment, which I may call direct development or outgrowths of this bimanual examination.

The first of them is the stretching or breaking down of bands of adhesions in cases of fixed retroflection or version of the uterus, and also in cases of prolapsed and fixed ovaries. All other treatment has, as far as my experience goes, been almost useless, and the patients have spent their lives in a state of chronic invalidism. The separation of such bands is effected by introducing two fingers into the rectum beyond the inner sphincter and between the two posterior ligaments, and the thumb of the same hand into the vagina. The other hand is then laid on the abdomen and the fundus of the uterus drawn forward. This puts all such bands on the stretch, and their recognition is thereby rendered more easy. The amount of force necessary to break them down varies greatly, and can only be learned by experience, but in some cases the separation is made easily, and though the patients suffer a good deal of pain afterward I have never seen any bad results follow.

The second development of the bimanual examination is the systematic use of massage in the treatment of chronic pelvic inflammation, whether of perimetritic or parametritic origin.

The treatment consists of two parts, the first being the elevation of the uterus. To carry this out the aid of a skilled assistant is necessary, whose duty it is with one hand to elevate the uterus from the vagina, and to keep it in a state of anteflexion, while his other hand is laid on the abdomen exactly over the uterus. The latter hand indicates to the operator the exact position of the uterus. Standing now at the foot of the couch or sofa on which the patient is lying, the operator lays his two hands, strongly supinated, flat on the abdomen, the fingers being pointed toward the pubes, and grasps the fundus between them; its position, as already said, being indicated by the hand of the assistant that is on the abdomen, while the fingers of the other hand of the assistant, which are in the vagina, prevent the fundus being pushed out of reach of the hands of the operator. Having firmly grasped the uterus the operator raises it steadily upward in the abdomen, in the axis of the pelvis, watching the face of the patient the whole time. This is necessary, as the slightest expression of pain is an indication to desist or to go more slowly. In this way the uterus can be elevated as much over its normal level as it had formerly been prolapsed. When the uterus has been elevated as far as is possible it is allowed to slip gently between the hands, and sink slowly in the abdomen. The duty of the assistant is now to receive the uterus as it descends on his finger which has remained in the vagina, and to keep it in a condition of anteflexion. This movement of elevation is repeated two or three times at each sitting, a few minutes' interval being allowed between each, during which time the assistant massages the fundus in order to arouse it to contraction, and thereby lessen its bulk.

The second movement now follows, and consists of forcible separation and forcible closure of the knees. To carry it out the patient should be placed in the exaggerated stone position, and closing the knees and thighs should elevate the sacrum from the couch, so that the body rests on the elbows and feet only. While in this position the operator forcibly separates the knees, the patient resisting as much as possible. This is repeated about three times. The contrary movement is now practiced, the patient lying with the knees widely separated, and the operator bringing them forcibly together. This is also repeated three times, and closes the sitting. The patient now turns over gently on the face, and remains in that position for from five to ten minutes. It is well when it is possible for the patient to remain in the recumbent posture for the first few days of the treatment, but this is not essential.

The treatment is repeated daily till the cure is effected, the time required varying greatly, but being usually from four to eight weeks.

That total prolapse of the uterus is capable of permanent cure by this method is beyond doubt, and I have myself seen one case in which no return of the prolapse had occurred six months after the termination of treatment. In some cases the method will probably fail, viz., in old people or where there is a badly ruptured perineum.

An interesting account of this method, with an explanation of its probable *modus operandi*, was published last year by Professor von

Preuschen. He considers that the chief factor in the cures is the forcible ab- and adduction of the thighs, which he has found causes the levator ani to contract powerfully, and thus form a natural barrier to the descent of the womb, while the chief effect of the elevation of the uterus is, he thinks, to restore it to its normal condition and anteflexion, which makes the descent much more difficult. Whatever, however, may be the explanation given, the fact remains that permanent cure by this method is possible, and consequently the method by which it is attained can not but be worthy of our earnest consideration.

ORIGINAL ABSTRACTS.

By DR. KIRKLAND RUFFIN, Norfolk, Va.

ABSTRACT OF SOME OF THE ADDRESSES DELIVERED AT THE FORTY-SEVENTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION. From the *British Medical Journal*.

The President, Claudius G. Wheelhouse, F.R.C.S., delivered an address with the title "A Cursory Review of the Progress of Medicine and of Medical Education." He spoke of the medicine of the early ages when with such companions as the Arabian mythologists, astrologers, and such like visionaries, she had to pick her way through the gloomy times of mystery and uncertainty. Gradually the light of truth has shown more clearly, until now she stands forth as a companion of even the exact sciences. This advance is due to individual efforts, and each one of us, however humble may be the current of his life, either aids the progress or hinders it. Hundreds, whose lives are not illumined with the torch of genius, leave behind them the undying results of patient labor. Union is strength, and that which men by individual labor never could have accomplished the principle of association has enabled us to do, and a fund of wealth which must otherwise have died with individuals, has been preserved to us forever by these yearly meetings and with the aid of a journal. What opportunities were there in the beginning of the present century for spreading knowledge beyond a limited area, however brilliant and valuable the work might be. Now every great discovery almost instantly becomes the property of even the remotest nations of the world. What medicine was before the beginning of the eighteenth century we can only conjecture, but we believe it to have been little more than empiricism founded on close observation, and we know the surgery was very crude and even barbarous and cruel as compared with that of the present day.

In the early part of the present century the general practitioner, as a rule, was a hard-working, industrious man, who spent most of his time in his saddle, and who thought little of bodily exertion; a hard-thinking man, but with little mental training and education; whose opportunities for acquiring professional knowledge had been few and short; and whose chief knowledge was the fruit of his own observation added to the traditions of the place or practice in which he had been brought up. As a physician—his remedy for every "acute" disease was venisection, followed by a superabundance of mixture, powders, draughts, pills, lotions, and so forth, with which he hoped to effect a double purpose, to cure his patient and to remunerate himself, for personal labor was estimated by his patients at a very low rate in comparison with the amount of medicine. He had a good sound knowledge of drugs in general, but he was too ready to rely on them. He knew something, but not much of morbid anatomy, and while "walking the hospitals" he had the opportunity of seeing a few *post-mortem* examinations and marking the ravages of diseases which he was apt to regard as the diseases themselves. He knew nothing of pathology or physiology. His treatment was based on nomenclature, and he who knew the greatest number of formulas for the greatest number of complaints was considered the cleverest doctor. As a surgeon, he was even further behind the general practitioner of to-day. There were certain men, well known in their districts, to whom to appeal in surgical emergencies. The practitioner, on entering the profession, was not called upon to prove himself in anyway specially adapted for it. For the first five years of his professional life he was compelled to serve an apprenticeship, and then, after a few months of hospital experience, he entered on practice with a fair all-round idea of its ordinary requirements.

The Medical Science of the Present Day.—That the medical science of our time is in advance of that of that time is beyond question. The advance in large measure is due to our possession of vastly improved instruments of precision. To our ancestors the revelations the microscope has made to us were but a dream. To them the existence of a *materies morbi* was only an argument, whereas now we not only know that the causes of some diseases are material, but we can demonstrate and see them and recognize their individuality, forms, the phenomena of their growth, propagation, and development. In like manner the microscope has revealed to us many of those hidden mysteries which constitute the whole science of physiology, the beauties of the capillary and lymphatic circulations, etc., etc. Thus medicine and surgery have been founded on a rock. And so, by other instruments of precision, barrier after barrier has been broken down. Take, for example, the advance along the pathway opened up to us by electrical science. By means of it, we now see law and order in the intricacies of the action of the nervous system, whereas ignorance, hypothesis and mystification formerly reigned supreme. Physiology has grown into a true science, and pathology has advanced at an equal pace.

Public Medicine.—Every community now has a health officer. Every kind of disease is tracked to its hidden birthplace. Can an epidemic now run riot and devastate whole countries as it formerly did?

Look at the great scourges described in history—as malarial fevers, small-pox, typhus fever, cholera, etc.

Medical Education in the Past.—In former times no educational test was required for those who desired to enter the medical profession, and many were so rough and uncultivated as to bring on the medical students an unenviable notoriety. Fifty years ago the plan of educating a man was this: For five years after leaving school he was compelled, as an apprentice, to learn the very A B C of his profession, and to watch and observe the practice of his master. After a while he was permitted and encouraged to try his "prentice hand" under the guidance of his superior. Then he was sent for three years to a recognized hospital and medical school to attend both didactic and clinical lectures. Once and for all he was examined, and he had to show that he knew the anatomical construction of the body, the master laws of physiological action, the chief principles of medicine, surgery, and midwifery, and that he was qualified to cope with diseases and accidents in general, and to take intelligent charge of the health of the public.

Medical Education in the Present.—Year by year we have been accumulating the burden the student has to bear and, instead of increasing his opportunities to aquire the strength necessary to bear it, we have curtailed his time, have deprived him of material advantages, and have demanded results almost impossible of attainment. The five years of apprenticeship have been done away with, and in four years, instead of eight, we permit the whole work to be completed. As soon as a boy can pass an ordinary and very limited educational examination, he may take his place in a medical school. We demand of him that he pass at least four examinations, and to make this more easy to allow him to split up these four into eight or even ten examinations, and by clearing them off in fragments we give him the opportunity to dismiss study after study from his mind until at last remains the one final test, at which, by a supreme effort, he may show he has attained a sufficient theoretical knowledge to satisfy the examiners and that he has acquired a fair comprehension of the principles which underlie his future work. That this is impossible is shown by the fact that a large majority of students voluntarily take five years instead of four for this education, and then, after that, eagerly seek hospital appointments.

The new system is superior to the old in one thing. It takes its stand on a higher grade of education, both general and professional, and probably *after a few years' practice*, a man educated under the new system, will be the better practitioner than one educated under the old system. By that time he will have picked up what the other began with, and henceforth he will easily distance him. The author then gives an example of a man who had passed all the examinations necessary to enable him to register as a qualified practitioner who confessed that he had never given an anæsthetic, had never passed a cathether nor pulled a tooth! The time to acquire simple information is when the mind is eager, inquiring, impressionable, and plastic; when mistakes and failures are of comparatively little moment; when a little wholesome ridicule can be borne with equanimity. In later life the young man, perhaps a little elated and puffed up by having passed his examinations, does not bear well the rebuffs which failures bring nor are they so productive of advantage. In our hospitals, workhouse infirmaries, and public dispensaries there is a vast fund of information which might be made useful but which now runs to waste. In pupilage, a year or two at the commencement of professional study in one of these institutions would prove the very best beginning; and in following the practice to be there seen, under the direct guidance and supervision of superiors, a youth would see work which in after life would be of incalculable service to him.

ADDRESS ON SURGERY. By T. Pridgin Teale, M.A., F. R. C. S., F. R. S.

Detail in Surgery.—The author gives prominence to conclusions which have been formed during a surgical life of over thirty years, made up not of his work alone, but very largely of the freest interchange of thought and experience with colleagues.

In ligating arteries he advises to apply two ligatures, and divide the artery between them to relieve the tension, which may be the cause of ulceration and secondary hæmorrhage. After ligating the brachial artery at the elbow (in one instance where the artery had been wounded), he divided the artery between the two ligatures, and the ends separated fully half an inch, showing how much tension there must be.

For treating stricture of the urethra, he recommends the use of a sound which was invented by Sir Joseph Lister. The principle of the sound is this: It is bulbed at the point. After the narrow neck, the stem gradually increases in size until it attains, at a point about four inches from the bulb, a calibre two sizes larger than the bulb. Hence the stem of a No. 1 dilates the stricture so that the bulb of No. 2 easily passes, etc. We have in it all the advantages of both conical and bulbed sounds, and avoid the disadvantages of both. He no longer needs catheters or bougies. His experience in the last twelve years has been most satisfactory. In that time he has only been compelled to do perineal section once from inability to get through, or to satisfactorily dilate a stricture. He has never performed internal urethrotomy. Rigors have very rarely occurred. At the first sitting he dilates up to ten, eleven or twelve, and he believes full dilatation to be safer than the older method of partial and gradual dilatation. In a few cases he failed to introduce Lister's No. 1, but he got over these by the aid of a filiform guide, which he then screwed on to a conical sound, like Lister's with the head cut off. The filiform bougie guides the sound through the stricture, which is then dilated so as to use Lister's instrument.

In speaking of effective drainage, he insists that it is not necessary that there should be a dependent opening. The leading idea should be so to provide, that, whether by position of opening, by shape of opening, or by use of drainage tube, secretions shall escape from every part before they have time to become septic. This idea of drainage, combined with the principle of rendering a cavity extra-peritoneal, is the key to some recent masterly developments of abdominal surgery.

Another "detail" in surgery which he thinks is quite important is the independent stitching of the peritoneum. After abdominal section for removing the ovaries, etc., there is absence of tension on the peritoneal stitches, very little bleeding from them, and greater facility in uniting the abdominal wall from not having to provide for accurate adaptation of the peritoneal edges. This is also especially useful in umbilical hernia, for the peritoneum having been incised round the margin of the ring, and stripped from the abdominal wall for about an inch, can be easily stitched together because of its loose attachment to the abdominal walls, and the ring can then be closed with wire sutures.

As a preliminary step in every operation on the rectum or anus, the sphincter ani should be dilated by the fingers. If properly done, it contributes greatly to ease in operating, to comfort of the patient after the operation, and to permanency and perfection of the results. He has often cured internal piles by merely stretching the sphincter. In operations for fistula in ano, dilatation of the the sphincter is an essential preliminary. If the internal orifice be close to the anus, it is at once displayed and brought into easy reach. If the internal orifice is high up and beyond the sphincter, we can cure the fistula without carrying the incision through the sphincter, and thereby running the risk of incontinence. Dilate the sphincter well, and then enlarge the external orifice in such a way that the opening in the skin forms a base of a triangle, with its apex at the other end of the fistula. Scrape the track of the fistula well, and introduce a drainage tube to reach within half an inch of the opening in the bowel. He has found constipation produced by a tight, spasmodic, or irritable sphincter, and he has often found, though never saw described, a peculiar rigidity, a sort of inelastic ring, like a fibrous degeneration of the muscle, which does not resist the introduction of one finger, but bars the rectum as with a ring of iron to the introduction of two. In such cases only artificially softened evacuation can escape.

For his first fifteen years he used chloroform almost entirely; for the last fifteen, ether. As a result of the comparison, he asserts that ether is, for safety to the patient and for comfort and convenience to the operator, immeasurably the better anæsthetic. The disadvantages of giving ether by pouring it into a cone formed of a towel are great and obvious. The struggling of the patient, the icy coldness of the inhaled air, the saturation of the room by twelve, fifteen or twenty ounces of ether spent on a single case, and the not unfrequent and occasionally fatal bronchitis which followed, are obvious drawbacks. Clover's inhaler overcomes all these objections. To give ether badly brings it down nearly to the level with chloroform as to safety. A good etherist with Clover's inhaler will, in nine out of ten cases, have his patient ready for operation in two or three minutes, and with the expenditure of about half an ounce of ether, and will need about an ounce for each subsequent quarter of an hour that anæsthesia is kept up.

AN ADDRESS IN PHARMACOLOGY AND THERAPEUTICS. On Some Practical Points in the Use of Antacid Remedies in Dyspepsia and Gravel. By Sir William Roberts, M.D., F. R. S.

There are, perhaps, in the whole range of therapeutics no simpler problems presented to us than those which have reference to the palliative treatment of acid dyspepsia and the chemical prophylaxis of uric acid gravel. Although the objects in view are so simple, and the means of attaining them so well known, there are a number of practical points in carrying out the indicated lines of treatment which are not so well known. For our present purpose we may class antacids (*a*) as those which take effect in the stomach—gastric antacids; and (*b*) those which are designed to take effect in the kidneys—renal antacids. The gastric antacids in common use are the alkaline and earthy carbonates and lime water. Renal antacids include, in addition to these, the acetates and citrates of potash and soda, which are changed in the primae viæ into the carbonates of these bases.

GASTRIC ANTACIDS.

They are employed in two distinct classes of cases, namely, in acid dyspepsia, and, secondly, in a variety of conditions characterized by great irritation of the stomach, often with vomiting, which we seek to allay by giving milk mixed with lime water.

Antacids for Acid Dyspepsia.—Sufferers from acid dyspepsia are in the habit of relieving their pains by the use of antacids. The best mode of administration is in the shape of a lozenge, which should be deliberately sucked, and not roughly chewed and swallowed. The process of sucking induces a plentiful flow of alkaline saliva, and the presence in the stomach of this bland demulcent secretion is soothing to the angry mucous membrane. He has had a lozenge made which contains three and a half grains of chalk, two and a half grains of magnesium carbonate, and one grain of sodium chloride. These quantities, in saturating power, are equal to ten grains of bicarbonate of soda, which is a full antacid dose. The chalk and magnesia are practically tasteless—a manifest advantage—while the salt sharpens the flavor, and thus promotes the flow of saliva. As to the comparative merits of the several antacids employed in acid dyspepsia there is, perhaps, on the whole, not much to choose. The alkaline bicarbonates have a disagreeable taste, and if taken in excess leave an alkaline residuum which, to say the least, is not normal. The earthy carbonates, on the other hand, are tasteless, and, owing to their insolubility, they cannot, when taken in excess, cause the neutral line to be over-passed. Perhaps the best rule is to change the antacid from time to time.

In regard to the question whether there is any harm in the practice of habitually using antacids for the relief of acid dyspepsia, the author has, after extended and close observation, come to the conclusion that the practice is harmless. He, however, always enjoins the following rules in regard to their use: They are not to be used at or near meals; not sooner than three-quarters of an hour or an hour after breakfast, nor sooner than an hour or an hour and a half after dinner; they are not to be used regularly and systematically, but only as occasion demands; that is, when the pain is more severe than one could be reasonably expected to bear when he has easy means of relief ready to his hands; lastly, the use of the lozenges is to be stopped if their employment does not cut short the pain. An antacid dose is sometimes a useful means of diagnosis in cases of gastralgia.

Lime Water with Milk.—When the stomach is intolerant of food, this is often given with the happiest result. Sometimes, however, the symptoms are not allayed, and the milk is vomited up in hard, sour curds. Failure is due to the feeble, antacid property of lime water. Quick-lime is soluble only to the extent of about half a grain to the ounce of water, and this is equivalent in saturating power to one grain of chalk and to one grain and a half of sodium bicarbonate. Six ounces of lime water are equal to only a single antacid dose of chalk or soda, hence, when a moderate dose of the former fails we can often substitute the latter with a perfect result. We give a table of the relative antacid properties of the several articles in common use:

10 grains of sodium bicarbonate = 12 grs. pot. bicarb.
“ “ “ “ = 6 grs. creta precipit.
“ “ “ “ = 6 grs. carb. magnesii.
“ “ “ “ = 3 grs. calcined magnesii.
“ “ “ “ = 6f℥ lime water.
“ “ “ “ = 2fʒ liq. potassæ.

RENAL ANTACIDS.

We have quite as rational an indication for using renal antacids as for using gastric antacids. It is chemically impossible for uric acid to be deposited in the free state from alkaline urine, and we have the means of harmlessly rendering the urine alkaline. There are, however, a good many practical difficulties. The disposition to uric acid gravel has a certain persistence.

The several conditions which favor the precipitation of uric acid in the kidneys in healthy persons coincide only at night, and the same rule holds to a less extent in calculous subjects; therefore, if we safeguard the night, the day will generally take care of itself. In the milder cases a single full antacid dose at bedtime suffices to prevent the precipitation in the kidneys of uric acid. For this purpose the citrates and acetates seem to be better than the bicarbonate—the effect seems to be more protracted. On the whole, citrate of potash is preferable in doses of forty to sixty grains in three or four ounces of water for an adult. In severer cases a second dose should be taken about the middle period of the hours of sleep. But in some cases the perversion is so great that there is a deposit of uric acid all the time, even after meals. In these cases additional doses of the antacid are required. Generally these severe conditions last for only a short while. The dose can be regulated by the morbid acidity. If precipitation of uric acid in a specimen of urine, taken in the morning or just before dinner, and placed in a warm place to prevent the deposit of urates, a morbidly imminent crystal of uric acid will appear at once, or, perhaps, in an hour or two. The less acid, the longer it takes. Hence, we may guage to a certain extent the size and frequency of the dose of the antacid needed.

OBSERVATIONS ON COUGH AND COUGH REMEDIES. By James K. Crook, M.D. Read before the Clinical Society of the New York Post-Graduate School and Hospital, April 20, 1889. From the *New York Medical Journal.*

The author does not intend to discuss all the conditions and diseases in which cough is a symptom, but speaks rather of that numerous class of " walking cases " in which this phenomenon is the chief—and often the only—evidence of a variation from health. In prescribing for a cough we have to consider the points of origin, the stage of the affection—and, if it be bronchial—the stage of the secretions; the function of the cough—whether it is useless and should be stopped, or conservative and should be aided or let alone. Some coughs are useless because ineffective, as in the early stage of bronchitis and in chronic bronchitis and phthisis, with a tenacious, viscid secretion; some are useless in every way, as in pleurisy and early phthisis, and require sedatives; the physician has to decide which is more harmful, the cough or the sedative. We must remember that many cough medicines are unreliable and extremely unpalatable and even nauseating, so that they often disorder the digestive system. We should explain to the patient that cough is only a symptom, and often a salutary one.

Most " walking cases " owe their origin to congestion or inflammation of some part of the respiratory mucuous membrane. If there is much pain and irritation in connection with a cough due to laryngeal irritation, a small quantity of a sedative preparation—as the tincture of aconite, chloral hydrate, or hydrocyanic acid—in a little warm, sweetened water is indicated. For dry cough, the sedative being deficient, hydrochloride of apomorphine, gr. 1-50 to gr. 1-30, or ammonium chloride, grs. v, or oleo-resin of cubebs, mx to mxv, three or four times a day, will give relief. Curative measures, though, are sprays and inhalations, etc., of which he especially recommends a spray of borate of soda, grs. x to an ounce of tar water.

If the origin be in the bronchi and is seen very early in the first stage of inflammation, Dover's powder, a hot foot-bath, and vigorous counter-irritation will sometimes arrest the disease. It is proper, if these fail, to resort to mild stimulating expectorants, and he especially recommends a combination of syrup of ipecac, chloride of ammonium, and syrup of wild cherry. As a medium for giving cough remedies, syrups are by far the best; but, if they should disagree, substitute glycerine, mucilage, or gum tragacanth. If the cough is barking, hoarse, or rasping, and interferes with rest at night—a common cough with children—a little vinegar and sugar with a teaspoonful or two of hot burnt brandy at bed time will often have a happy result. When the stage of secretion of acute bronchitis is established an occasional dose of a stimulating expectorant is in order. If it becomes chronic, nearly every known form of cough may occur, and consequently we must vary our medicines. If the cough is easy with free expectoration no treatment is necessary, but we may give a small dose of squill, wine of antimony, or ammonium chloride at long intervals. The chief points are warm clothing, avoidance of exposure, and sedative mixtures and drops and attention to the general health. A dry, hacking cough, with little or no expectoration, calls for a sedative. A drop of dilute hydrocyanic acid with syrup of tolu or wild cherry, or a few drops of paregoric, or morphia, gr. 1-32, or tincture of hyoscyamus, mxx, may be added to each dose. In advanced stages of bronchitis we often find a distressing, violent, paroxysmal cough where the exudation may be very abundant, but hard to raise because of its viscidity. The paroxysms are apt to be worse on rising in the morning. In these cases we are to liquify the exudation, and thus facilitate expectoration with slight efforts. Stimulating expectorants are especially indicated, and the formulæ known as Stoke's expectorant —each dose contains ammonium carbonate, gr. i, fluid extract of squill and senega each mii, and tincture of tolu, mii—is especially useful. Hot coffee or tea on rising also aids to mitigate the morning spell. According to Fothergill, a patient can be educated to increase the usefulness of his cough by taking a deep inspiration before giving way to the expiratory coughing act, thereby avoiding long and violent coughing spells which are so apt to cause collapse of the alveoli and consequent emphysema. If emphysema be present, a few grains of potassium iodide, and, if there is much dysponœa, a few drops of Hoffman's anodyne may be added to the mixture. In bronchorrea in chronic bronchitis, it is best to direct attention to the general health, for opiates and astringents relieve temporarily at too high a cost. In recurrent bronchitis or Winter cough, terebene, in doses of five drops to begin with, to be increased to twenty if required, has been found very useful. It may be continued a long time without injury to digestion. The varieties of cough from phthisis as a rule are treated as similar ones from bronchitis. The dry hack at the beginning is best treated by syrup of hypophosphites, and this syrup is one of the best vehicles for mixtures for phthisical cough. If cough mixtures are not well borne, an ounce or two of glycerine heated so that the patient can inhale the vapor is often useful. If fetor exist, a small quantity of creasote, carbolic acid, or Listerine is advisable. In weak or debilitated subjects, Dr. Love's mixture of extract of malt, whiskey, glycerine, lemon-juice, and crushed sugar is very useful. Of course, expectorants do no good in nasal, pharyngeal and auricular coughs; the best treatment is inhalation of carbolic acid, and the internal administration of equal amount of the bromide and iodide of potash. The cough of pleurisy is painful and should be avoided. Uncomplicated cases require nothing more than an occasional sedative. Cough from uncomplicated mitral disease calls for cardiac tonics and rest. Caffeine citrate, grs ii to v with ammonium carbonate acts well in some cases. Cough caused by thoracic aneurism calls for strict quietude and sedatives. There are many other kinds of cough, but they are beyond the scope of this paper.

DISCUSSION.

Dr. T. E. Satterthwaite said that we are too apt to treat a cough as a symptom; we should try and trace it back to the point whence it rose, and treat the disease rather than the cough.

Dr. S. S. Burt considered cough to be the necessary part of these diseases and we were inclined to treat the cough and ignore the origin, of which we knew little. Bronchitis had its stage, through which it had to go, whether cough mixtures were given or not. He thought cases of bronchitis were better off without medicine. The best treatment for chronic bronchitis is a change of climate, which often works like a charm. In phthisis, chronic or acute, he had found it a good plan to wash the throat with a solution of morphine in glycerine, or to give trochees with a little opium in them; but, on the whole, he had seen few cases cured with medicines.

Dr. R. W. Wilcox thought it well to give a mild expectorant to please the patients and lessen irritation. When there was much secretion he believed atropine did good. Coughs which could not be accounted for were best treated with the bromides. He had failed to obtain good results from morphine or opium in cough mixtures except to ease the pain of a dying patient. Bromides accomplished all the good that morphine could do.

Dr. H. D. Chapin thought cough mixtures did more harm than good because they upset the stomach. We have to give patients something; then give something which will do as little harm as possible. He believed codeine to be a valuable remedy which did not upset the stomach. He thought ammonium chloride useful but too nauseating.

Dr. G. E. Abbott thought the simple remedies the best. He recomended the inhalation of spirits of camphor.

Dr. W. A. Shufelt said that he thought cough was a reflex paroxysm; and the more one coughed the more likely it was to be repeated. In treating cough he had given up cough medicines and such remedies as creasote, alum, and turpentine. In acute bronchitis he advised the inhalation of the vapor of terebene three or four times a day.

The Chairman, Dr. Andrew H. Smith, said he had found iron, or a solution of tannin in glycerine, or a two per cent. solution of camphoric acid useful as a spray to the throat, In chronic bronchitis he had found a spray of the camphoric acid (two per cent.) useful. The mechanical result of coughing must be irritating, and on this account it should be instigated as much as possible, but he used opiates only in exceptional cases. The best sedative, especially when there was an excess of secretion, was cerium oxalate. He gives it dry on the tongue, to be washed down with water. He thought cough in many cases, especially in females, was due to the hysterical elements. Cough could be restrained to some extent by voluntary effort, especially when aided by a thrashing or the cautery. For the cough of early pleurisy he generally strapped the patient's chest as tight as possible, but in a manner to leave him comfortable. He had had no evidence of the value of ammonium chloride, which could best be given in a little mineral water. Chloroform water he had found a useful vehicle for many prescriptions, especially when the patient objected to sweet medicines. Especially should overheated rooms be avoided; he had often seen cures by sending the patient out of doors when the air was crisp and cold.

Dr. Crook stated that he did not wish to be understood as saying that he had cured cases of chronic bronchitis with Stoke's expectorant, but he had merely found it a useful stimulating expectorant. He thought morphine absolutely necessary sometimes. His patients with painful pleuritic cough had preferred the cough to strapping the chest. He had been disappointed in the bromides and codeia.

RECENT ADVANCES IN THE TREATMENT OF DISEASES OF THE SKIN. By L. D. Bulkley, M.D. From the *Journal of the American Medical Association.*

It is a constant remark among those acquainted with the subject that there is not so much a need for new remedies in dermatology as there is for a better knowledge as to the true value and best mode of application of those remedies we now possess. No one remedy or plan of treatment is wholly satisfactory in any particular case, or will reach every case.

The first advance in the treatment of skin diseases is the recognition that accuracy of diagnosis is essential to success in treating this class of affections, and intelligence in the applications of remedies can alone insure results which are not disappointing. The time has passed when a patient with a skin affection is given arsenic internally and zinc ointment externally; and then, if failure should come, to give mercury or iodide of potassium. The second point is almost as important as the first—it is equally important to consider well and appreciate thoroughly the particular stage or condition of the eruption and, knowing the action and effect of each remedy, to use it accordingly. The same measure advised for a certain disease will act entirely differently under different conditions and at various stages of the complaint. Another general remark— not only do remedies and measures act differently on different persons and under diverse conditions, and in different stages of the disease, but their action may be modified, aided or retarded by a number of influences not always thought of, such as diet, hygiene, and the effect of other remedies, internal and external. Hence we see the difficulty of judging of the value of a new remedy.

First, among the advances in dermatology in later years is the mechanical therapy of diseases of the skin ; of this there are several forms. The curette is useful in treating lupus, in removing small epitheliomata, water excrescences, and in treating some chronic patches of eczema or psoriasis. The cutaneous punch is useful in removing powder stains, the scales of moles and the like, and in taking sections for microscopic examination. The cutaneous lance is useful in treating acne, multiple scarification, acts well in some cases of lupus, some nævi, and in rosacea. Electrolysis, in some conditions yields brilliant results ; it is especially useful in removing superfluous hair, pigmentary and hairy moles, nævi of various sizes, and in acne rosacea. The galvanic cautery is also very useful in some cases. The galvanic current is useful in checking the pain of herpes zoster, and tends to arrest its disease; also in relieving the pain of dermatolgia. Ichthyol and resorcin, classed by Unna as reducing agents, are capable of doing some good but are often irritating. A dressing kept soaked in a two or three per cent. solution of ichthyol, often has a remarkable effect on ulcers of the leg. In some moist eczemas, light bathing in a two per cent. solution of ichthyol followed by a calamine or zinc lotion, we get good results. The action of resorcin is more uncertain and restricted. It is a nice, cleanly application in tinea versicolor in a three to five or even ten per cent. solution. It also acts well in seborrhœic eczema and is useful in some forms of acne.

Unna has recently written much about the use of plasters instead of ointments. They are useful but often prove very irritating and, unless the medicament be very bland, too much inflammation is set up. It makes a good fixed dressing, but drugs may also be suspended in flexible collodion or traumaticin. Lanoline has not fulfilled the high expectations which had been raised for it. It aids in keeping the skin soft and pliable, when without it its oily water would disappear and the skin be left harsh and dry. The petroleum preparations, vaseline, cosmoline and alboline, are valuable additions and are excellent agents for lubricating a dry and scaly skin and as excipients for carbolic acid and other anti-pruritic remedies, but they should not be used as a base for all ointments where we wish to form a protective covering which shall hold a medicament in contact with the skin for some time. They are too soft. He prefers for this purpose, above all others, unguentum aquae rosæ of the pharmacopœia. Salicylic acid is a valuable addition. It has a drying effect on the skin. In oily seborrhœa it is useful added to hair tonics in a strength of three to five per cent. Twenty per cent solution is an effective parasiticide, and a drachm each of zinc oxide and salicylic acid to the ounce of starch is useful to check excessive perspiration. Chrysophanic acid acts well in psoriasis, but stains the clothing and sets up too much inflammation. Pyrogallic acid may be substituted for it but is not so good. Anthrarobin is also a good substitute. Naphthol, in ten per cent. ointment, is useful in scabies, and in fifteen per cent. ointment in psoriasis and seborrhœa. Menthol in from five to fifteen per cent solution with a little glycerine and water and alcohol often allays itching. Cocaine in solution or ointment of five to ten per cent. is also useful. This latter is also useful to apply to the surface before epilating hairs for parasitic disease. Campho-phenique also is very useful for pruritus.

CLINICAL RECORDS.

PRACTICAL MASSAGE. By Frank R. Fry, A.M., M.D., Clinical Lecturer on Nervous Diseases, St. Louis Medical College.*

Without making a tiresome explanation of the rather ambiguous title chosen for the brief remarks that I have to make this evening, permit me to state that it is not my intention to discuss the art of massaging. Neither have I anything to say about hygienic massage, so called, but simply a few words concerning its therapeutic value; and limiting myself still more, I prefer to speak of its therapeutic use in the shape of general massage, this latter being its most valuable and practical employment.

To Dr. S. Weir Mitchell belongs the undisputed credit of having first clearly demonstrated to the medical world the great advantages of treating certain patients with a general massage, combined with rest, forced feeding, etc. The S. Weir Mitchell treatment cannot be said to be by any means popular, although several years have elapsed since it was fully demonstrated to be an eminently practical and very valuable method. The reasons of this are, first, a prejudice against it on the part of both the profession and their patients; and, secondly, the fact that the details and length of time involved necessitate an amount of painstaking on the part of the physician and a sacrifice and expense on the part of the patient that deter them from undertaking it. At all events, I am prepared to state that this is largely the attitude of the community in which we live to the matter; and from what I read and hear, I am led to infer that the same is true, to a greater or less extent, in the other cities of this country and of Europe. That its popularity increases though, there is no question, and it is something we should become more interested in. To this end, and in order to make my remarks of more certain practical value, I propose to consider the possibilities of our conducting this treatment here in the West, and more especially in this city.

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* Read before the St. Louis Medico-Chirurgical Society.

Without going into the history and details of it, let us first briefly inquire into the range of its usefulness. Lauder Brunton (" Disorders of Digestion: Their Consequences and Treatment.") says:

" In speaking of the disorders of digestion, I have left to the last one of the most important methods, and one which sometimes gives results little short of miraculous. This method was first introduced to the profession in America and England by Dr. Weir Mitchell in his book on 'Fat and Blood, and How to Make Them,' but in this country it obtained little notice until it was undertaken by Dr. William Playfair. It consists essentially in passive exercise and abundant feeding. We all know how active exercise increases the appetite. Tissue change goes on more rapidly in the organs, waste is more abundantly excreted, and more food is eagerly sought for. But there are many feeble, flabby persons who cannot exercise, or if they can, will not. Moreover, there are others who are quite willing to exercise the voluntary muscles of the limbs, but cannot exercise the involuntary muscles of their internal organs. Now, treatment by massage helps both of these. It increases the nutrition both of internal organs and voluntary muscles, and under its use patients apparently helplessly incurable, completely recover. Dr. Playfair has had wonderful success with cases of hysterical women; but I have been most struck with the success of the treatment in the case of a man in whom all medical treatment had proved useless.

" This patient, whom I first saw about two and a half years ago, in consultation with Dr. Image, of Bury St. Edmunds, was a very tall, powerfully built man, who had been accustomed to out-door life and much active exercise. He had at one time suffered from asthma, but this had left him, and he became liable to attacks of pain and vomiting. I was induced to look upon the case as one of neurotic dyspepsia, but other physicians who had been consulted, both in this country and on the Continent, regarded it as tubercular peritonitis. For two years he continued to become more and more emaciated, until at length he was reduced to the appearance of a living skeleton. Only once in my life do I remember seeing a man so thin, and that was a person who was exhibited in a show. Dr. Playfair was at first doubtful about taking the case; but as Dr. Image and I were anxious that he should do so, he kindly agreed, and in the course of eight weeks our patient was a different man. Under the use of massage and forced feeding his muscles enlarged, until now he might perfectly well join a Highland regiment, and wear a kilt without being ashamed. His muscles, which had almost entirely disappeared, have not only become of normal size, but they are as hard as pieces of wood; and from being a simple skeleton, he is now a strong, well-developed man."

S. Weir Mitchell says (lecture on " Diseases of the Nervous System, especially in Women"): " There is a class of nervous and exhausted and hysterical women who are, as a rule, weak, pallid, flabby, disfigured by acne, or at least with rough and coarse skins; poor eaters, digesting ill, incapable of exercise, and suffering from the cold extremities which lack of this, with thin blood, occasions. They lie in bed, or on sofas, hopeless and helpless, and exhibit every conceivable variety of hysterics.

"It has for some years been my custom, when in these women every other plan has failed, to deal with them by a certain combination of therapeutic means which has now been securely tested by time and hundreds of successes. It has stood the criticism and won the approval of many competent physicians, who have found in it a resource when all else had failed. * * *

"It is a plan never, in my opinion, to be used when exercise, outdoor life, tonics or change have not been thoroughly tested, but where these have failed, it leaves us with a novel resource without which no case of broken constitution, nervousness or old hysteria should be left to hopeless invalidism, and to a life in bed or on a lounge."

I have selected the above quotations because from them we may, I think, form pretty accurate conclusions as to the scope of this plan of treatment; namely, that it is an invaluable method of dealing with certain otherwise intractable disturbances of nutrition that manifest themselves by the symptoms recounted above, and others familiar to all experienced physicians.

As to the details of this treatment there is, with us in the West, at least, much misapprehension, due, I think, to the fact that the real object and rationale of it are not sufficiently investigated by those who would profit by knowing more of it before they form an opinion and decide that it is wholly impractical for their purposes. Brunton says, in the above quotation, it consists essentially in passive exercise and abundant feeding; Mitchell, that it is valuable to prevent rest from being hurtful. To one having watched and studied the course of several suitable cases through this régime, it becomes apparent that its essential features are that with it may be gained all the advantages of active exercise without the demand for work on the part of the nervous, circulatory and muscular systems necessary in active exercise, and that by it the amount of exercise, rest and nourishment may be very accurately apportioned and kept under the control of the physician. With this method we may establish regular exercise, where without it the benefits of exercise would have to be abandoned. With it, we may obtain the good effects minus the bad effects of rest. With it, we may bring about a proper assimilation of nutriment when all other means have failed.

All of these features must be constantly kept in view through the entire course of each case, the exercise, the rest, the nourishment. We may possibly arrive at more satisfactory conclusions as to their relative importance and proper association in cases, by considering them severally. The exercise is accomplished by massage. What must the massage consist in? In reply I would say, briefly, any manipulation, comfortable to the patient, that will accomplish in a practical manner the object to be attained. The services of a highly trained masseur or masseuse, although very desirable, are by no means necessary. The object is not so much to have what would be called a scientifically or artfully thorough massage, as a thorough going over of all the parts by some few of the many massage manœuvers that shall be effectual in their results. The term massage, in its modern sense, includes certain manipulations, very numerous indeed, as will be seen by reference to works on the subject, but all included under four general heads, namely, frictions, pressions (which include the kneading manipulations), percussions and movements. A few of each of these kinds of manipulations may be soon and easily learned by an intelligent person. And if such person have the tact and endurance to put them into practical execution, and, what is more important, the requisite training to understand the necessity of obeying the physician's orders, such a one very soon becomes capable of giving all the aid in the way of massage necessary to this plan of treatment. It is always desirable and in the great majority of cases absolutely necessary to have the constant attendance of a trained nurse. It is very desirable also, for economy's sake and for other reasons that will readily occur without my stopping to mention them, to have the massaging done by the nurse.

In undertaking, a few months ago, to take several patients through what I considered to be a desirable course of treatment for their conditions, I determined, if possible, to substitute for a very imperfect and unsatisfactory massage treatment that I had instituted in several instances a nearer approach to the S. Weir Mitchell treatment. In hunting for suitable nurses, whom I intended to have receive some preliminary instructions in massage, I was fortunate to find four graduates of the St. Louis Training School for Nurses, who happened just then be receiving such instruction (from a gentleman then in the city, who, I am sorry to say, has since left it, for I had hoped to have him train others, including some men, for this work). They none of them thought they knew enough about massage to undertake the tasks that I wanted them for. However, they took much interest and care in the work and they have succeeded admirably. The skill that they have already attained, and their previous good training as nurses, make them thoroughly competent for this work. With their aid I have had a degree of satisfaction in it that I had hardly hoped I could gain in so short a time. Keeping in mind one or two simple rules, and with a nurse who can and will follow instructions, the practitioner soon finds that there is not much difficulty in adjusting the massage to the necessities of the case; the treatment should never be made irritating, wearisome or otherwise uncomfortable to the patient. In the beginning our chief concern should be to make it gentle enough; as we proceed and tolerance is gained, to make it active enough. In this matter the tolerance of the patient, properly estimated, should be our only criterion.

In determining the question of what shall constitute a suitable amount of rest in these cases, or in fact when we are and are not resting our patients, we have, to my mind, a much more difficult problem than that of regulating the massage, and one for the solution of which there is little opportunity to formulate rules. The majority of those whom we will find occasion to place under this treatment are nervous, hysterical women, sometimes physical and moral wrecks as well. With such we can accomplish nothing without complete seclusion, away from the "hurtful sympathy and over-zealous care," or, in some instances, the annoying and irritating influences of relatives. Ample experience has well established the necessity of seclusion in order to obtain rest in such cases. We should never let ourselves be betrayed, by the hope of making an exception, into a compromise on this point when our judgment shows us that it is necessary. We are almost sure to fail. The excellent results so often thus obtained are well wörth making a stand for. Once having got the patient committed in this matter and under our control, we have an advantage that we should proceed to make the best of, devoting time and thought and all possible pains toward making her physically and mentally comfortable. Having secured for her actual rest, even for a short time, the battle is half won, for with such rest comes a sense of comfort and contentment that has often been so long absent as to be almost forgotten. In these cases the massage should at first consist of nothing more than soothing friction, on the face and extremities, of short duration. As the patient gains in rest, the massage must be proportionately increased, but always made not only comfortable but grateful to her.

Those of our patients who are not of the distinctly hysterical type, will be found to be suffering from a greater or less degree of feebleness, usually a great degree; for it is only when they find themselves becoming helplessly feeble that they, in the majority of instances, are willing to submit to this treatment. To most of these a degree of recluseness that amounts to almost complete seclusion is grateful, and it is only in this way that enough rest may be secured to enable us to institute an advantageous amount of massage. Among the latter class of patients are to be found many cases of intractable dyspepsia. Often the most important feature of the treatment, especially in the beginning, is to supply and regulate the nourishment so that we may establish a sufficient gain in nutrition to enable us to advance with the massage. Mitchell has shown the wonderful results to be gained by feeding large quantities of milk. There are possibly some cases in which milk cannot be used. But by proceeding cautiously at first, especially if we carefully use some of the well-known methods of partially predigesting and otherwise so preparing the milk that the stomach may more easily handle it, we may, almost invariably, soon have the patient assimilating large quantities of milk and other nutriment as well, which without massage and rest would be quite impossible.

It will be observed that thus far I have not considered the use of general massage, except in connection with regime that is properly and conveniently called the S. Weir Mitchell treatment. In fact, aside from this there is little opportunity for a legitimate employment of it. However, with increasing facilities for its proper administration, and a better appreciation of its effects, I expect to see an intelligent adaptation of it to a wider range of cases than now seems possible. There is a class of cases where I am quite satisfied we may often use it to great advantage, namely, in certain cases of obesity, of even moderate fatness, in individuals with weak hearts, who, because of the latter rather than on account of their weight, are incapable of taking sufficient active exercise to maintain a proper standard of nutrition. These persons in attempting to diet for their fatness, or by taking various drugs and nostrums, often impair their nutrition to the extent of bringing about a dangerous degree of weakness, without having in any respect lessened their weight. In at least some of such cases we may by massage and a moderate amount of rest, more safely and rapidly than in any other way, reduce the weight, giving the circulatory system an opportunity to gain its equilibrium. I have recently witnessed gratifying results from this treatment in several instances—for example, the following: Mr. R., æt. 75 years. I had known Mr. R. for several years as a very active old gentleman, apparently in perfect health. He had been in the habit of walking a great deal for many years. Although quite stout he seemed capable of this exercise, frequently making his walk long, five to ten miles, without apparent fatigue.

I was first called to see him, professionally, November 30, 1888. I found his lower extremities and hands very edematous. His breath was short on slight exertion. He was unable to lie down for even a short time, having to pass his nights sitting upright in a large chair. He was constantly drowsy, sleeping most of the day and night, if permitted to do so. His pulse was feeble and intermitting. The heart sounds were also feeble. I found no evidence of renal trouble. After two weeks of treatment with digitalis, nux vomica and saline laxatives carefully used, with no appreciable good results, the family asked me to try massage. The improvement was so prompt and rapid as to leave no question that the massage accomplished a very desirable purpose. The edema rapidly disappeared, and along with it much fat which the old gentleman could well afford to lose.

He is now enjoying his bed and his walks again; but, so far as I know, following my admonition not to over-do in respect to walking and other exercise. His heart seems quite capable of what it now has to do, keeping regular and strong in its action for two months past without the aid of drugs. In this case the massage was begun gently, but finally the patient enjoyed a very active dose of it, in fact, as strenuous as the masseur was capable of.

Bearing on this point is the following, quoted from Mitchell: "Dr. Wm. W. Keen has recently shown that in a case of albuminuria where the albumen disappeared entirely with rest and re-appeared with exercise, the most extreme massage had no such influence as physical exertion. This curious and interesting fact suggests to us that the difference between exercise and massage must be far greater than has been supposed, and that probably the latter does not raise the blood-pressure as does the former."

EXCISION OF THE CLITORIS IN A CHILD FOR NYMPHOMANIA. By J. A. Sutcliffe, M.D.

Three years ago I was called in consultation with Dr. Wm. Wands to see a child, seven years of age, who had been under his care for several weeks. The patient was a bright, beautiful blonde, of excellent physique, and the only child of respectable parents. She appeared to be in perfect health, with the exception of an intense morbid desire to manipulate the clitoris. Her eyes would glisten with excitement, and severe punishment inflicted by her parents would not restrain her. Even in her sleep she would make lascivious movements with her body. She desired the company of children of the opposite sex, and was very shrewd in her endeavors to secure their association.

The most careful examination of her case failed to elicit any cause for this condition, unless it was due to slight hypertrophy of the clitoris. Sedatives, bathing and blistering had been resorted to without any permanent benefit. The child was a source of constant care and distress to her parents. She could not attend school, and could not be trusted out of their sight for a moment; her mother prayed for her recovery or her death, and begged that something be done, regardless of any risk, to save her child from a life of disgrace.

After observing the child for a short time, it seemed evident that nothing short of removing the clitoris would be of any service. The parents cheerfully consented, and with the assistance of Drs. W. Wands and A. F. Wright, the operation was performed. The mucous membrane was divided in an oval direction, and the clitoris transfixed with a piece of silk to prevent retraction of the stump. It was then removed back to the crura, and the vessels ligated. The mucous membrane rolled forward, making a hood-shaped covering for its extremity.

The child never knew that any operation had been performed. The wound healed kindly, and from the day of the operation she seemed to forget that she ever had a clitoris. From that time to the present she has been as well behaved a child as can be found anywhere. She now goes to school and learns rapidly.

If a report has been made of such an operation in so young a person, I do not remember to have seen an account of it. The various text-books denounce the operation in the most emphatic manner. Erichsen expresses his views as follows:

"Removal of the clitoris, even though not enlarged, was some years ago recommended and extensively practiced as a means of curing some forms of epilepsy and of erotomania. This is an operation as unscientific as it would be to remove the glans penis for the cure of similar affections in the male, and one that the experience of the profession has proved to be as useless in its results as it is unscientific in its principle."

Gross and other high authorities treat the subject in the same manner. With the greatest deference for these high authorities, I cannot think that amputation of the clitoris is analogous in its results to amputation of the penis. The penis has associated with it the urethra, and is essential to the act of coition and to procreation. The clitoris is simply a rudimentary penis without the urethra, and aside from the sensibility of its papilla, has no important function to perform. The rugæ of the vagina are richly endowed with sensitive papillæ, and it is questionable to what serious extent sensibility is destroyed, especially in a child, where possibly the remaining papilla may take on increased functional activity. In the absence of any assignable cause in a child, save slight hypertrophy, I am unable to see why a clitoris should not be removed, or its papilla destroyed with the cautery, when it becomes a constant annoyance and nuisance to its possessor and her relatives.

At any rate the prompt and permanent relief given in the above case was such as to justify the operation. It proves that there are exceptions to the general rule laid down by the authors on this subject.—*Indiana Medical Journal.*

AN INSTRUCTIVE CASE OF ATHEROMATOUS NARROWING OF THE ASCENDING AORTA, WITH RESULTING CHANGES IN THE HEART. By Robert H. Babcock, A.M., M.D., Professor of Clinical Medicine and Physical Diagnosis in the Post-Graduate Medical School of Chicago, Attending Physician to the Throat and Chest Department of the South Side Free Dispensary.

During the early part of November, 1888, Dr. Jaques, of this city, referred to the writer for examination the following case. The patient was seen twice, and it is the second of these examinations, made November 15, from which the subjoined notes have been taken:

T. P., æt. 34 years, male, laborer, German. Mother died of phthisis; father still alive at the age of 68, and well; brothers and sisters in good health. Patient denies having had syphilis; was well until February, 1887, when he first complained of sense of heat and dryness of throat. This lasted for some months, and was followed by similar feelings in chest. In April, 1888, he became ill in bed, with cough and pain below left scapula and heart and in left shoulder; has failed in health progressively since that time, and has occasionally been dropsical. To this meagre history were added a few facts by Dr. Jaques. He first attended patient in June, 1888, and found him suffering from cough, pain below præcordia, oppression in chest, anorexia, and general debility. The pulse was rapid and feeble, and physical examination of chest revealed cardiac murmurs that were thought to be mitral. Tonics and digitalis were administered, with benefit to patient's general health. But the digitalis was not well borne, and was discontinued by patient because of the palpitation it occasioned.

Status presens.—Patient pale, slightly cyanotic, in good flesh, breathing short and hurried; complains of pain in left side of chest, mainly below heart; shortness of breath on exertion; troublesome cough, chiefly at night; mucous expectoration, sometimes tinged with blood, loss of appetite, constipation, and scanty urine.

PHYSICAL EXAMINATION.—*Inspection.* Superficial veins of neck, chest, and upper extremities conspicuously distended, thorax well-formed, abdomen full, epigastric pulsation and clearly defined cardiac impulse in sixth intercostal space an inch outside of left nipple. *Palpation.*—Pulse slightly collapsing, 96 to the minute, skin cool and hands cold; pectoral fremitus abolished at base of right lung below scapula, apex heat concentrated and of moderate force, distinct epigastric pulsation, pressure in epigastrium, occasioning pain and sense of discomfort in chest behind sternum; carotid pulse slightly delayed. *Percussion.*—Resonance over entire right lung less full than over the left; distinct dullness below right scapula, and extending forward into axillary region; impairment of resonance at base of left lung posteriorly, præcordial dullness increased in all directions, particularly in transverse diameter. *Auscultation.* — Respiratory sounds of right feebler than those of left lung; faint bronchial breathing; distinct but distant voice sounds and mucous râles upon deep inspiration, at right base posteriorly, and both sibilant and moist râles at left base behind; anteriorly, between right nipple and clavicle during inspiration, three short, rough, faint, puffing sounds of very different quality, and distinct from the inspiratory sound; in the mitral area two murmurs, a faint systolic, followed by a louder, longer, rougher diastolic one, both heard on the body of the sternum, and the second of the two more distinct in this latter situation; in the epigastrium, stethoscope being pressed firmly upward, a loud, long, harsh systolic bruit, quite different from murmurs just described. *Diagnosis.*—Mitral and aortic regurgitation, with dilatation and hypertrophy of both ventricles, chronic pleuritic effusion at right base, with inflammatory induration, or may be, simple compression of lung; chronic secondary bronchitis, chronic passive hyperæmia of all other viscera.

Patient remained under his attending physician's care until his death, December 30, 1888. An autopsy was held on the following day, at which the writer was not able to be present. The organs were found in a state of chronic engorgement, and presented nothing of special interest as reported. There was fluid in both pleural sacs, but the report concerning the lungs was unsatisfactory.

The heart and ascending aorta were transmitted to the writer, and upon them hangs the interest of the case. The pericardium had been opened, and what fluid it may have contained allowed to escape. There were no evidences of inflammation of the sac. The organ itself was considerably enlarged, and its walls were, even to the naked eye, fatty. The left ventricle was in a state of dilated hypertrophy, and the mitral orifice so stretched as to render the valves functionally incompetent. They did not present any evidence of inflammation. Upon the aorta being slit open, its internal coat was seen to be in a state of very marked atheroma, and displayed patches of calcarous infiltration. The walls of the vessel were thickened, at one point a short distance above the sinuses of *Valsalva*, so greatly as to have narrowed the lumen almost a half. One of the aortic cusps was thickened at its free edge, but otherwise healthy, as were its fellows. The aortic ring was, however, stretched, and had rendered the valves, like the mitral, incompetent. The degeneration of the arterial coats have involved the mouths of the coronary arteries so as to partially occlude them, but the vessels themselves appeared not to be affected.

It is a matter for regret that the condition of the thoracic aorta is not known, since it might have elucidated some features of the case. Was there widespread atheroma of the vessel, or was it limited to its ascending portion? The patient was young for such pronounced arterio-sclerosis, except as a result of syphilis, of which disease there was no history. Since, then, it could not be attributed to age, the query arises, did it have its beginning in an acute or subacute attack of inflammation? Was the symptom of heat and dryness in the throat, and subsequently within the chest, due to a mild or subacute aortitis? Unfortunately we have no means of determining this. Acute aortitis, when recognized, is found to be an extremely grave affection; yet it may be assumed that such an inflammation may run its course not only without detection by the physician, but even without serious manifestation of its existence to the patient. Pathology is not able to assert in any given case of atheroma, how much of the process is owing to inflammatory and how much to merely degenerative changes.

But, if not able to discover the etiology of this aortic sclerosis, we can recognize the mischief it occasioned. The coronary arteries are flushed with blood during its recoil against the valves produced by the systole of the aorta, and hence it is legitimate to assume that any condition increasing this rebound would serve to promote the coronary circulation. But here was a process at work that partly closed the mouths of these arteries, and thus actually lessened the supply of blood sent to the heart-muscle. The consequence, therefore, was the same as in sclerosis of the coronary arteries, a gradual failure of nutrition of the cardiac muscle, and its resulting fatty degeneration. Thus weakened, the walls of the left ventricle, at first hypertrophied in consequence of augmented resistance of the aorta, began to dilate; the aortic ring relaxed, and rendered its valves incompetent. The regurgitation thus occasioned increased the dilatation of the ventricle still more indirectly by letting the blood slip by instead of into the narrow openings of the coronaries, and directly, by distending through its impact the already weakened walls. Next followed functional incompetence of the mitral valves, with its chain of dire results—pulmonary engorgement, enlargement of the right ventricle, the venous engorgement creeping slowly backward until all the viscera suffered from chronic hyperæmia; function was everywhere impaired and death was at length the penalty.

Aortic and mitral regurgitation were diagnosticated, but was it possible to determine their true nature? Scarcely, at the stage of the case in which it was seen by the writer. Both murmurs were soft, possibly somewhat softer than would have been the case had they been produced by roughening and distortion of the valves, through endocarditis. Unfortunately, moreover, there was nothing in the necropsy, as narrated to the writer, to explain either the peculiarly harsh bruit heard in the epigastrium or the three puffs audible at the right of the sternum during inspiration. The former may have been, and, very likely was, due to atheromatous roughening of the interior of the thoracic aorta, while the latter was probably the same bruit conducted through the lung-tissues. Yet, if that were so, why was it heard during inspiration only, and why over so limited an area? The increased tension of the lung during inspiration can hardly account for it, for, whatever increase of conductivity the lung might gain in this condition would be offset by the greater amount of air contained, and, as is well known, the conductibility of sound through the lungs is in direct proportion to their density, or, in other words, to the diminution of air within them. The singularity of the phenomena in question suggested to the writer the possible existence of an aneurismal sac whose bruit could be heard in this situation only when pressed upon by the distending lung, and that the bruit below the ensiform cartilage came from the same source. He regrets specially, therefore, that the thoracic aorta was not carefully examined, for it is well known that an intra-thoracic aneurism may exist a considerable time before giving rise to signs of pressure, or even manifesting itself by distressing symptoms.

Still, one point worthy of comment remains—the intolerance of digitalis. When in uncomplicated aortic reflux in the stage of compensation, digitalis is not well borne, it finds explanation in the following facts: The drug strengthens the ventricular systole and thereby the force with which a large volume of blood is thrown into the aorta; arterial tension is increased by the medicine in turn, and, in consequence, the resistance offered to the mass of blood projected into the aorta is greater; the regurgitating stream impinges, therefore, all the more powerfully against the inner surface of the left ventricle, and the heart rebels. Now, in this case, even before the aortic valves became incompetent, digitalis must have aggravated the difficulty. The ventricle threw its contents all the more strongly into the aorta, against the point of its narrowed lumen; the succeeding recoil must have been correspondingly stronger, must have subjected the valves to still greater strain, and may even have furthered the ultimate stretching of the ring. To say the least, the medicine must have served but to augment the labor the heart already had to perform.

The practical lessons taught by this case suggest themselves.

PROCEEDINGS OF SOCIETIES.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The fifteenth annual session of this society was held at Evansville, Indiana, September 10, 11, 12, 1889. The President, Dr. Geo. F. Cook, of Indianapolis, occupied the chair; the Secretary, Dr. R. L. Thompson, of St. Louis, was at the desk, and the efficient Chairman of the Committee of Arrangements, Dr. A. M. Owen, of Evansville, was omnipresent. The attendance was good for this "side-tracked village in the pocket of Indiana."

The President, owing to the immense programme—ninety-eight papers—asked to be excused from a formal address, and made only a few opening remarks. Dr. A. M. Owen failed entirely to find words to express the warm welcome for himself and the city of Evansville towards the visiting physicians.

The social feature of the meeting was not omitted. The whole day was spent in reading and discussing papers, and the whole night, or, at least by some of the company, was given up to social enjoyment. On the evening of the first day a banquet was given the society in a most beautiful grove, at which about five hundred doctors and citizens with their ladies sat. The weather was unimpeachable, so was everything else. A number of toasts were called and responded to, and Dr. I. N. Love, of St. Louis, as Toast-Master, made the woods ring. On the evening of the second day a complimentary ball and concert was given, which was also attended by a large number, and was a very enjoyable affair. On the evening of the third day an excursion was made to Newburg. Besides these there were a number of other social features of a private nature. Evansville surpassed even her own record.

Prominent gentlemen from without the Mississippi Valley were present, among whom were Drs. Geo. H. Rohe, of Baltimore, and W. C. Wile, of Danbury, Connecticut. Dr. Wile brought with him a number of decorations of the Order of Connecticus which he conferred on some of the members. The badge consisted of wooden nutmegs attached to the coat button by a green ribbon.

The Committee on Nominations by their Chairman, Dr. I. N. Love, of St. Louis, reported as follows: President, Dr. Joseph M. Matthews, Louisville; First Vice-President, Dr. C. R. Earley, Pennsylvania; Second Vice-President, Dr. T. B. Harvey, Indianapolis; Permanent Secretary, Dr. E. S. McKee, Cincinnati. Invitations were received from Excelsior Springs, Mo., Chattanooga, Tenn., Cincinnati, Ohio, and Louisville, Ky. Louisville was chosen, and the time September 9, 10, 11, 1890. For Judicial Council for 1890, to serve two years: Drs. A. V. Woolen, Indianapolis; J. C. Culbertson, Cincinnati; A. B. Shaw, St. Louis; R. L. Thompson, St. Louis. To serve one year: Dr. J. B. Murdock, Pittsburgh; Chairman Committee of Arrangements, Dr. I. N. Bloom, of Louisville; Committee of Credentials, Drs. A. M. Owen, Evansville; Duncan Eve, Nashville; A. S. Barnes, Mo.; W. C. Chapman, Toledo; W. V. Roberts, Kentucky; J. H. Hollister, Chicago.

The newly elected President was escorted to the chair and made some feeling remarks.

Antipyretics, Analgesics and Hypnotics was the title of a paper by Dr. I. N. Love, of St. Louis. He discussed quinine, opium, antipyrine, acetanelide, bromides, etc. We should guard carefully against the possibility of self-drugging, and with this end in view he thinks it the physician's duty to himself dispense all analgesics and sedatives. He can thus limit the amount taken, and if desirable keep from the patient a knowledge of the dosage. All the derivatives of the aromatic series being antiseptic, antipyretic and analgesic, are of great value to us in our battles with disease. Acetanelide, in his experience, stands at the head of the list and exalgine has been so satisfactory as to justify a more extended use.

The Abortion of Acute Nasal Catarrh was read about by Dr. S. S. Bishop, of Chicago. He performed it, if the case was a severe one, with one-half gr. morphia, and one one-hundredth gr. atropia lessening the dose if the attack was a light one.

A Simple Method of Treating Fistula in Ano was the subject of a paper by Dr. Joseph M. Matthews, of Louisville. This paper created an interesting discussion which was taken part in by Drs. J. B. Murdock, of Pittsburgh ; H. H. Grant, of Louisville ; Archibald Dixon, of Henderson, and W. H. Wathen, of Louisville.

The Myopic Eye was the brief title of a pointed paper by Dr. Dudley S. Reynolds, of Louisville. The doctor related a series of interesting cases. He indicated the three principal agents for the arrest of the progressive myopia : eserine, pilocarpine and iridectomy. That the myopic eye is always an unsound eye should be constantly borne in mind. That the myopic state of refraction is always the result of abuse, should be universally known, for it concerns the whole human family.

The Treatment of Strangulated Hernia was the title of a paper by Dr. W. H. Meyers, of Fort Wayne, Indiana. He advised to shun opium, and deprecated delay. If the patient is seen within a few hours of the accident taxis, with no other interference, may be employed for six or eight hours as the extreme limit. Otherwise this treatment should be limited to minutes and the operation done.

The Accoucher and His Forceps was the subject of an essay by Dr. A. S. Bemes, St. Louis.

Infantile Therapeutics was the title of a paper by Dr. J. A. Larabee, Louisville. He thought the old therapeutic furniture fitted remarkable well the new house with its microbian windows. He thought infantile therapeutics should include an infinite knowledge of hygiene and of hydrotherapy. Water is entirely too common to command respect. If it could be sold in small quantities at fabulous prices it would be better thought of. He often found it necessary to use a slight amount of deception to induce the use of water. He discussed endermatic, hypodermatic and epidermatic medication, also the treatment of diphtheria.

Chronic Tonsilitis was the subject of a paper by Dr. Fletcher Ingalls, of Chicago. He insisted on not subjecting children to the torture of removal of the tonsils without the benefit of an anæsthetic.

Discussed by Drs. Wm. Porter, of St. Louis, and E. R. Lewis, of Indianapolis.

Dr. I. N. Bloom, of Louisville, reported two cases of amputation of the penis, and discussed the subject.

The Treatment of Pulmonary Phthisis was the subject of a paper by Dr. C. F. McGahan, of Chattanooga, Tenn. He thought when there were present symptoms of the disease without inflammation, the majority of the cases were capable of cure. He reviewed the treatment of phthisis since the discovery of Koch, and related his personal experience. He had phthisis in 1882 (but didn't look as if he had) and had recovered. In treatment, we have returned to nutrition and pure air. We should always let the patient have a thread of hope, though it may be a false one. The care of the stomach was the great thing. Give as few medicines as possible so as to keep the stomach in good order. The hygienic treatment should take the precedence over the medical. As for health resorts, he preferred Asheville and Aiken.

Differential Respiration was the subject of a paper by Dr. F. C. Wilson, of Louisville, who showed his bellows for this purpose.

The Formation of Artificial Urinary Canal was the subject treated by Dr. W. N. Wishard, of Indianapolis. Dr. Wm. C. Wile, of Danbury, Conn., in discussing this paper, described an operation for this object which was original with himself. The paper was further discussed by Dr. G. Frank Lydston, of Chicago.

Purulent Conjunctivitis was the title of a paper by Dr. D. A. Thompson, of Indianapolis. He insisted on cleanliness, washing the eye, if necessary, every half hour with a saturated solution of boracic acid in water. He also used the nitrate of silver, but had not met with success in the use of bichloride of mercury. Discussed by Dr. Knapp, of Evansville.

Sympathetic Diseases of the Eyes from Inflammation of the Nasal Passages was the subject of Dr. Francis Dowling, of Cincinnati. He thought the medical attendant was too prone to treat the eye disease and overlook the disease in the nose. He should recognize the fact that the origin of the disease is in the nose and not in the eye, and shape his treatment accordingly.

The Cautery *vs.* the Snare was the subject treated by Dr. E. R. Thompson, of Indianapolis.

PHARMACY AND THERAPEUTICS.

Treatment of Acute Catarrh of the Upper Air Passages.—Dr. J. G. Carpenter advocates both the constitutional and local treatment of colds. At the onset a hot foot-bath will aid in equalizing the circulation. The temperature of the water should be not less than 105° F., and the bath continued for ten minutes. In severe cases a Turkish bath will reduce the fever, and relieve the aching pain and check the nasal discharge. A good substitute is found in a tub bath, if the temperature of the water is maintained at 110° F., and the immersion continued for thirty minutes. The patient should roll himself in flannel blankets, without drying, and remain carefully wrapped until the sweating ceases; then the body should be anointed with vaseline, and the process repeated once or twice in the next twenty-four hours.

Opium in doses of ¼ to ½ gr. will encourage the perspiration. A good combination is as follows:

℞.
Quin. sulph. - - - - - ℈i
Pulv. opii - - - - - grs. iii
M. Bene, in chart. No. 10 div.
Sig. One every two hours in a wafer.

When the patient is nervous or delirious, bromide of potash may be given with tincture of belladonna or opium.

If the pulse is hard and full, small dose of trinitrin, gr. 1-100, every four hours will reduce the blood pressure. Aconite is also very serviceable in this condition, and is most effective when given in small and repeated doses. One-fourth to one-half drop may be given every hour.

Cold compresses to the throat, when pain exists or deglutition is painful, and changed every hour until pain is relieved, or cloths wrung out of hot water and applied every ten to thirty minutes, until pain is relieved, are valuable local measures.

The *local treatment* should be soothing, cleansing and healing. In the first stage the nasal chambers may be sprayed with a 2 to 6 per cent. solution of cocaine, or the cocaine may be incorporated with vaseline and applied with a camel's-hair pencil. After the cold is established, the following are serviceable:

℞.
Ac. carbolici - - - - grs. i
Ol. eucalypti - - - - - gtts. iii
Vaselini - - - - - ℥i
M. Sig. Melt and spray.
℞.
Iodol. - - - - - grs. viii
Vaselini - - - - - ℥i
M. Sig. Use locally.

Insufflations of bismuth subnitrate, combined with powdered lycopodium, assist in protecting erosions and hastening resolution.—*Jour. Amer. Med. Assoc.*, April 20, 1889.

"ACTÆA RACEMOSA" IN DISEASES OF NERVOUS ORIGIN (By J. Craig Balfour, L. R. C. P. & S. Ed.).—Although the present pharmacopœia has retained this long under its new name of "cimicifugin," yet its value as a therapeutic agent in diseases of nervous or rheumatic origin seems to be far from appreciated by most men in general practice; in fact, I have heard of one London physician making the statement that its use was now almost entirely confined to specialists. In mentioning it some years ago to a leading hospital physician, he, while admitting its value, complained of an uncertainty in its action, as he had found it fail where he expected the best results; but having used it a good deal lately with success, I append a short statement of two or three cases, which may have the effect of inducing some to give it a trial where other remedies have failed.

The first is that of a rather nervously constituted and not very robust young lady who had suffered for years from acute dysmenorrhœa. Menstruation had commenced at the age of twelve, and from the first was attended by great pain and discomfort. All the ordinary domestic remedies were tried without avail, and several physicians, both in London and elsewhere, were called in, without much relief being obtained; and as one physician then attending the family said, after trying all the usual remedies unsuccessfully, that nothing more could be done, the patient had to resign herself to being confined to bed for a varying period each month, and to an amount of pain frequently so severe as to cause her to faint. Some years afterwards I accidentally became aware of her sufferings, and proposed that at least one more trial should be made to see if it were really impossible to obtain relief. On inquiring about the symptoms, I arrived at the conclusion that the pain was mainly neuralgic (though perhaps partly due to congestion), and I therefore determined to try the actæa, which appears to have a special effect in cases where the uterus and its appendages are implicated. I ordered ten minims of the tincture of cimicifugin to be taken night and morning for a few days before the menses were expected to appear, and to be continued during the whole period. I also ordered the patient to lie down, and to apply hot fomentations or mustard poultices to the abdomen when the pain commenced. From the very beginning of the treatment she experienced great relief, and in a short time found that a dose or two at the commencement of each period sufficed, keeping her so free from pain that only on exceptional occasions was it necessary to lie down for a few hours, so that now the patient feels like a different being, and is no longer haunted by the dread of each returning period.

This is but one of several cases, but I have mentioned it on account of its severity and intractability under other treatment.

The next case is that of a middle-aged lady, who suffered from a severe spasmodic pain in the stomach. In conjunction with obstinate dyspepsia, she had acute spasmodic seizures recurring at intervals of a few weeks, and terminating in prolonged fainting fits, sometimes alarming in their severity, as she suffered from an extremely weak heart. She had consulted several physicians both in England and abroad, and by all the pain was said to be neuralgic, and not due to any disease of the stomach. Nothing, however, could be relied on to give relief but a draught prescribed for her by one of her medical attendants, containing chloric ether, hydrocyanic acid, tincture of belladonna and tincture of opium, and at times even this failed to have the desired effect. On account of the dyspepsia and the dread of eating anything, which she found apt to bring on an attack of the acute pain, she had for about six years subsisted mainly on toast, fish, and vegetables, and was able to take only very little of either at a time. Soon after her arrival in the city in which I was then practicing, I was called in to attend her one night, when she had an unusually severe attack of the neuralgia in the stomach, which neither her draught or mustard poultices seemed to have much effect in relieving. At that time I gave a small hypodermic injection of tartrate of morphine at the seat of the pain. This soon gave relief, and there was no immediate return of the spasm, but only an extreme soreness throughout the whole region. She was always very weak for a considerable time after an attack of this sort, and could take nothing but a little beef-tea. However, I determined to try to combat the dyspepsia, though with but faint hopes of succeeding where so many had failed. I relied mainly on giving the stomach as little work as possible, and for this purpose I ordered teaspoonful doses of a mixture of one part lime-water and two parts milk, administered every twenty minutes. This was continued for some days, when the quantity was gradually increased, and I allowed in addition a raw egg, well beaten up with milk and a little sherry. She also very soon took a teaspoonful, night and morning, of the juice carefully scraped out of a piece of raw beef, leaving all the fibre behind, and given mixed with a little fine bread-crumbs, and a pinch of pepper and salt. This treatment I often prefer to artificially digested foods, as being generally more easily obtainable and less expensive; the natural repugnance to raw meat is, as a rule, easily overcome, if it be carefully prepared and covered with bread-crumbs. After a short course of this treatment the patient felt a great craving for more solid food, to which she was gradually allowed to return, when she discovered she could eat almost anything in moderation without suffering from it. She was, however, considerably troubled with acidity, which was generally relieved by taking a few drops of dilute nitro-hydrochloric acid in a little water before meals. For some time there had been no return of the severe spasmodic pain, but that it was not entirely gone we at last discovered. However, on its first return I ordered ten minims of the tincture of cimicifugin to be given every eight hours in a little water, and continued for a few days, to be recommenced whenever there was any return of the pain or feeling of discomfort. This treatment was so successful that she is now quite free from any return of the severe neuralgic spasm, feels much better, and can eat almost anything, This patient suffered from a uterine fibroid, with a tendency to prolapse, which may have something to do with the cause of the neuralgia and the success of the actæa treatment.

In another very interesting case the drug proved to be of the greatest service, the more so, perhaps, as in the country it is next to impossible to make use of electrical and other means of diagnosing and treating nervous cases, especially when the patient lives at a considerable distance. A few months ago I was sent for to see a little girl of twelve years old, residing about ten miles off, who was said to be very seriously ill. On arriving at my destination, I found it was simply a laborer's cottage, but unusually neat and tidy, and I noticed at once that the child's mother had a delicate and more refined look than is generally met with in people of her class. On making inquiries about the patient, I was told that up to about six months previous to my visit she had been in apparent health, and had never suffered from any particular trouble, till one day she complained of pain in one leg and arm, and of not feeling at all well. From this time onward she gradually became worse. She was, at this period, seen by a medical man, who treated her for neuralgia, but without much success. Living at some distance, he did not see her very often, and appears to have first stated that she was suffering from neuralgia, then from rheumatism, and finally that her spine was affected, and ordered complete rest. Ultimately, the parents, anxious to know if nothing further could be done, called me in to give my opinion of her case. The patient was lying on a sofa beside the fire, neatly and tastefully dressed; she was a pretty child, pale from long confinement and with an anxious and frightened expression. On inquiring about her symptoms, I was informed that she complained of great pain in the legs and down the spine; there was also considerable tenderness over the abdomen. She could move her arms freely, but the legs only very slightly, and complained of pain in doing so, as well as acute pain when they were touched. She was apparently quite unable to walk or stand, did not sleep well, and complained of intense giddiness in the dark, and especially when left alone. I had her undressed, and examined the spine closely for any irregularity or trace of deformity, but found nothing, nor was there any specially painful spot; she seemed to have pain all over, and cried out if the back, legs, or abdomen were touched. After a thorough examination I felt satisfied that the pain arose from no disease of the spine, but was probably a hysterical neuralgia. There was not much family history to be got, but both the patient's mother and grandmother suffered from severe nervous headaches, as did also an elder sister. I told the mother that I believed her curable, and agreed to begin the treatment at home; at the same time warning them that she might have to be sent to the hospital, so as to benefit by a change of surroundings. To begin with, I ordered ten-minim doses of tincture of cimicifugin to be given every six hours, and in addition ten grains of bromide of ammonium at bedtime, and an extra dose whenever the pain became violent. I saw her again in about two days, and found that she slept much better and that there already seemed to be traces of improvement; but she complained of increased pain and tenderness over the abdomen, especially over the lower portion. In addition to going on with her medicine I then ordered mustard poultices to be applied over the region of the ovaries, to be continued about twice a day for two days, taking care not to make them too strong or to injure the skin. This seemed to afford considerable relief, and she gradually improved till she could move about a little. The bromide was discontinued, as she no longer felt giddy when left in the dark. In about three weeks I ordered, in addition to the actæa, a small dose of Easton's syrup at meal-times, as she seemed to require a little iron. At the end of six weeks she could walk with the aid of a stick, and appeared to be almost entirely free from pain. She was then sent away for change of air, and all medicines were discontinued. On returning home in about three months' time she appeared to be perfectly well and suffering neither from pain, giddiness, nor sleeplessness, though still delicate looking from her long confinement to the house. I have warned her mother that there may be a return of the pain at the commencement of the menses; but if so, I believe the actæa will again be successful in relieving it, as it has already converted her from helpless invalidism to a state of comparative health.

To these three cases, which were all severe ones and good tests of the efficacy of the drug, I may add one more. A lady, residing in London, who has had a large family, has, since the birth of her last child, suffered much from a severe neuralgic pain in the pubic region, which feels, she says, as if it were in the bones themselves. A few ten-drop doses of the tincture gave almost immediate relief.

PHENACETIN IN NEURALGIA.—Phenacetin is superior to antipyrin in good qualities, and possesses none of the bad qualities, and can be given in all cases where it is indicated. It is given in doses of seven and a half grains in the form of powder, and is especially valuable in neuralgia of peripheral origin, hemicrania and occipital neuralgia. In sciatica some experimenters have obtained good results, while others have given it in large doses and thought it was not a positive remedy in such cases. Experience seems to indicate that a patient may become accustomed to its use after its long continuance, and it may fail to manifest its analgesic properties. However, it is rather early yet to form positive opinions in regard to this drug.

ALETRIS CORDIAL IN THREATENED ABORTION.—M. D. Makuna, M. R. C. S., England, Lic. Med. University, Bombay, 1876, Trebeebut, Rhondda Valley, South Wales, says: "I have much pleasure in expressing my satisfaction with the results I have obtained by the use of Aletris Cordial. One of my patients who had miscarried three times previously took Aletris Cordial during the last three months of pregnancy, and was delivered of a fine, healthy boy. I ordered it at her own solicitation, as she expressed so much ease and comfort after the use of the first bottle. I am now giving it to two more patients who have miscarried several times before, and I am in hopes of good results. I consider it a valuable addition to the pharmacopœia on account of its anti-spasmodic and nerve-tonic properties, and I should not like to be without it.

INFANTILE CARDIAC HYPERTROPHY (Copeland).—

℞.

Infusion of digitalis		220 gtt.
Nitrate of potash,		
Syrup of orange flower	āā	8 grs.
Dilute prussic acid		gtt. 4.

M.—Sig. One teaspoonful every two hours (for a child of five years.)—*Revue de Thérapeutique.*

ON THE ADMINISTRATION OF AMYLENHYDRATE (PROF. J. V. MERING).—When, two years ago, I recommended amylenhydrate as a reliable hypnotic, specially distinguished because of the absence of accompanying ill effects from its administration and that it would not affect the action of the heart, I suggested these formulas:

℞

Amylenhydrate,	7,0
Aq. dest.,	60,0
Ext. liq.,	10,0

M.D.S. One-half to be taken at bed time.

To many the remedy was acceptable in this combination, but as some patients did not like the licorice, I looked for another vehicle for disguising the taste, and found it in the following:

℞

Amylenhydrate,	7,0
Aq. dest. flor. aurant,	50,0
Syrup. cort. aurant,	30,0

M.D.S. One-half to be taken in the evening.

The best mode for administration by far, however, is in beer.

℞

Amylenhydrate,	20,0

D.S. Take a teaspoonful (4—5 Ccm) in a small glass of beer.

As the amylenhydrate is only sparingly soluble in water or in beer (1 part to 8 parts) it is advisable before taking the amylenhydrate in a wineglassful of beer, to stir the mixture two or three minutes, and after drinking to take another swallow of beer. The remedy, as recommended by Prof. Jolly, can also be taken in wine, on the addition of 1—2 teaspoonfuls of sugar. Personally, I prefer the addition of beer, and this is the cheapest mode besides.

The administration of amylenhydrate in capsules containing 1 grm. each is also appropriate; the dose necessary to produce sleep is 3 to 4 grms., although I have frequently administered 6 to 7 grms., in cases of unusual nervous prostration, and always with good results and no ill-effect.

Since first calling attention to amylenhydrate, it has become the subject of wide and varied investigations, with the unanimous verdict that it is a valuable hypnotic, free from all harmful side-influences. I refrain from enumerating the many published commendatory reports, but will briefly summarize the principal points contained in two contributions recently published in the *Berlin klin. Wochenschr.*

Laves sums up the results obtained in the inner department of the Bethany, in Berlin, as follows:

1. Amylenhydrate is a very useful hypnotic, administered in doses 2—3 times those of choral.
2. It acts with a trifle less surety than chloral hydrate or morphia.
3. Unpleasant effects, such as excitement, dizziness or light intoxicated feeling were seldom observed; and dangerous symptoms, never.
4. A fondness (habit) for the drug, or a diminution of its hypnotic effect were not observed even after three months continuous administration.
5. Oftener than of any other hypnotic was the deep and refreshing nature of the resultant sleep commended.

Dr. G. Buschau, on the basis of experiences gathered in the Sanitarium Leubus, reaches the following conclusions:

Amylenhydrate, although not a hypnotic of the first rank, may be safely substituted for choral or paraldehyde; moreover it possesses the advantage over chloral in not disturbing the action of the heart in any measure; and it is to be preferred to paraldehyde because of its safer action in smaller doses, and also because of its freedom from the unpleasant exhalation odor which accompanies the administration of paraldehyde, a point which will be appreciated especially in private practice. Not only in asylums for the insane and for nerve-diseased patients, but in general practice physicians will find that amylenhydrate will prove a valuable hypnotic.

Particular care should be excercised to employ only absolutely pure amylenhydrate; it is unfortunately true that products are found in the market which will not dissolve in eight parts of water, but which become turbid and are adulterated with fusil oil and diamylen. I desire to warn physicians against the use of such impure products, as I have had opportunity to note the after-effects accompanying their use, consisting of congestions, severe headaches, nausea and tendency to vomit.—*Notes on New Remedies.*

A VALUABLE PRESCRIPTION FOR DYSPEPSIA.—

℞

Tinct. Colombæ, - - - -	2 oz.
Celerina [Rio], - - - - -	6 oz.

M.

Sig. Teaspoonful thrice daily.

VIRGIL MCDAVITT, M.D., Quincy, Ills., says: I usually find Celerina to be a very agreeable and acceptable nerve tonic, quieting and calming nervous irritability and causing sleep oftentimes after spells of continued wakefulness, adapted to use in much the same cases as valerian, assafœtida, etc., not a cure all, but a valuable addition to our armamentarium in the treatment of a class of cases which are often most vexatious and trying to the physician and worrying to the patient. In these cases I have often prescribed it alone or combined with other remedies with much success.

Phenacetin in Whooping-Cough.—Not long ago we alluded to some favorable experience in the use of phenacetin in whooping-cough that had been recorded in a Munich periodical. From a recent issue of the "Archives of Pædiatrics" a confirmatory opinion, by Dr. George C. Irwin, of Sebetha, Kansas, may be cited, showing that the drug has proved beneficial in very young infants having pertussis. A child only three months old, with whooping-cough marked by severe hourly spasmodic attacks, got well under half-grain doses of phenacetin, dissolved in ten drops of glycerin. The relief was noticed from the onset of the administration, for on the first night after using it, a few times, at four-hour intervals the child obtained over six hours of good rest. In this case antipyrine, as well as other drugs, had been used without avail.

Pil. Saline Chalybeate Tonic (Flint's).—In the *New York Medical Journal*, May 18, 1889, Prof. Austin Flint, M.D., speaks very highly of the following formula as a tonic in Bright's disease, and also in simple anæmia, stating that he has given it in nearly every case in private practice in which a chalybeate tonic was indicated for some time past, and in only one case out of 35 did it fail to cause marked improvement. Prof. Flint states also that in five cases of Bright's disease, of which he has notes, this formula was the only medicinal remedy employed. In all cases the tonic seemed to exert an influence on the quantity of albumen in the urine. Dr. Flint's formula is as follows:

℞.

Sodii chloridi (C. P.)	ʒiij
Potassii chloridi (C. P.)	gr. ix
Potassii sulph. (C. P.)	gr. vi
Potassii carb.	gr. iij
Sodii carb. (C. P.)	gr. xxxvj
Magnes. carb.	gr. iij
Calc. phos. præcip.	ʒss
Calc. carb.	gr. iij
Ferri redacti	gr. xxvij
Ferri carb.	gr. iij

M.—In capsules, No. 60.
Sig.—Two capsules three times daily, after eating.

In the great majority of the cases of anæmia, etc., in which iron was strongly indicated, the tonic seemed to act much more promptly and favorably than the chalybeates usually employed. In a certain number of cases in which patients stated that "they could not take iron in any form," the tonic produced no unpleasant effects.

This formula is now furnished by Parke, Davis & Co. in pill form, and reprints of Dr. Flint's article from the *New York Medical Journal* will be sent to doctors indicating their wish for them.

Bromide of Potassium as an Antidote to Iodoform.—A case of resection of a carcinomatous rectum is referred to in the *Wiener Medizinishe Blätter* for July 11, 1889, in which symptoms of poisoning were produced through the use of iodoform. Under the use of bromide of potassium rapid relief was obtained. This condition is explained by Samter and Retzlaff as due to the fact that bromide of potassium exceeds all other salts in its power for dissolving iodine compounds. They state that if a test-tube be half-filled with a solution of potassium bromide (1 to 3), fifty drops of tincture of iodine may be added without the iodine being displaced from its solution with the potassium bromide. This condition persists for several days, and bromide of potassium, of all the different salts recommended in iodoform poisoning, is the only one which is capable of retaining the iodine in perfect solution.—*Therapeutic Gazette.*

Rapid Cure for Erysipelas.—I would like to state that I consider that one may get absolute control over erysipelas generally within three days by simple treatment. Of one hundred cases of ordinary facial erysipelas treated, I should not expect more than three that would not yield within three days, very likely within forty-eight hours, with the simplest antiseptic treatment. My custom is always to treat cases of that sort by the application, during alternate hours of the day and evening, of a mild solution of carbolic acid in alcohol and water as an evaporating lotion. It is only in very exceptional cases that the disease is not almost completely under control, and has disappeared within forty-eight hours; but after three days it would be extraordinary if by this means every vestige of the disease had not disappeared. This has been my only treatment in erysipelas for many years. I have never known it to fail. I have never given a drop of medicine internally. I feel that I have absolute control over the disease. I am speaking now of ordinary erysipelas, not the deep-seated, phlegmonous erysipelas, of course.

The strength of the solution used is as follows:

℞.
Cryst. carbolic acid - - - - ʒss
Alcohol }
Water } - - - - - aa ℥jv.—M.

—*Dr. White, in Boston Med. and Surg. Journal.*

Saccharin in Ulcerative Stomatitis.—Dr. M. Fourcier speaks very highly of this remedy in the treatment of this form of sore mouth. He employs it in the following manner. He calls for a solution:

℞.

Saccharin	gr. j
Alcohol	ʒj.—M.

Of this a teaspoonful is added to a half goblet of water, and a complete solution made. This is then applied to the affected parts with a camel's-hair pencil about five or six times a day. It is not advisable to use stronger solutions.

REVIEWS.

THE PHYSIOLOGY OF THE DOMESTIC ANIMALS. A Text-book for Veterinary and Medical Students and Practitioners. By Robert Meade Smith, A.M., M.D., Professor of Comparative Physiology in the University of Pennsylvania, etc. With over 4000 illustrations. Philadelphia and London: F. A. Davis, Publisher, 1889. Cloth, $6.00, sheep, $6.75, *net.*

The author in his preface says: "It is surprising, in view of the ceaseless activity of physiological students throughout all the world, that more attention has not been devoted to the application of improved methods of research to the study of the functions of animals so important in the domestic economy. Unfortunately, investigators in this domain may almost be counted on the fingers, and the field which is yet untouched is almost unbounded." This is certainly, in a large measure, true; but it is quite as remarkable that with all of the knowledge we possess of the physiology of man deduced from experiments on animals, no one has put in book form before in the English tongue the methods pursued, in connection with an exact description of the anatomy of the animals. We are especially gratified to see a fellow countryman take the initiative here. The thoroughness with which the author covers the ground, and the pains bestowed upon the mechanical execution of the work, and the logical way in which he treats the subject makes us put still more pride in the attainment of American scholarship.

After considering our own possible prejudices in favor of the work, a natural consequence of the circumstances attending its production, we think it not unfair to the author, and perhaps of more interest to our readers, to substitute instead of our own review, that by a writer in the *Liverpool Medico-Chirurgical Journal*, for July, 1889; and this we do the more willingly, as it contains some interesting statements from our English cousin.

"An American paper stated some years ago that our American confrères wasted too much energy in compilations and translations, and devoted too little time to original work. If such a statement were correct when made, it now no longer holds good, and so may be looked upon as a stage in the natural process of evolution. These last few years they have been exceedingly fruitful in the production of many works of very high merit, among which we place this very able book on *The Physiology of the Domestic Animals*, which has got no competitor in the English language. Seeing that human physiology is largely indebted to observations and experiments on the lower animals, it may seem strange that there has been no previous attempt to produce such a systematic work as this one in English. Possibly physiologists may have thought that such a work would only appeal to a very limited clientele, but if this were so, we hope it may prove a mistake, as the vast array of facts here detailed are equally applicable to the human subject and to the domestic animals, while the more special details of human physiology receive very full consideration. The work is naturally divided into general and special physiology, with an important chapter on the reproductive functions. In the part devoted to general physiology he deals with the structure of organized bodies, cellular physics, and cellular chemistry, which includes the chemical processes taking place in cells, as well as their chemical constitution. In starting with the lowest forms of life, he describes the various properties of protoplasm, and the changes which it undergoes:

"'The peculiarity of protoplasmic motion, as seen in the amœba, is that motion does not occur around a fixed point, but rather is a flowing motion, such as might occur in the particles of a fluid. Thus, in an amœba, the changes in form and location are effected through the thrusting out of lobe-like prolongations of the periphery (pseudopodia), and their subsequent withdrawal, or the flowing into these extensions of the remainder of the body.'

"The section on cellular physics is subdivided into—the physical processes in cells, the physical properties of tissues, mechanical movements in cells, and the general conditions governing protoplasmic movements. We have here an application of well-known physical laws to explain phenomena which are constantly taking place in cells. We do not recollect having ever read a more clear and comprehensive exposition of cellular physics, and which we hope will prove of great educational advantage, as there are few subjects in which medical men, and even medical authors, in the present day, display more lamentable ignorance than on questions appertaining to physics.

"He enters very minutely into the chemical constituents of cells, and, on the whole, very accurately; but at page 86 there is a sentence which requires correction, as it is not only erroneous, but in its present form the author's meaning is not quite intelligible. After showing that the inorganic constituents of cells are taken up performed, and again leave the cells in the forms in which they entered, 'the most prominent exception to this rule is found in the case of carbon dioxide and sulphuric acid; the former originating in the oxidation of the hydrogen contained in the water of organic constituents, and the latter coming from the oxidation of the sulphur contained in albuminoids.'

"The carbon dioxide is the very end-product of all the oxidations which take place in the destructive metabolism of the higher carbon compounds. No doubt water is formed in a similar manner, as indeed the author states further on, as a final product in the long list of oxidations in the organic compounds containing hydrogen. Although sulphuric acid is formed from the oxidation of the sulphur, it cannot exist in the free state, but must immediately unite with the alkaline bases to form sulphates.

"In connection with the parts played by water, and its various modifications on organic life, he refers as follows to the effects of freezing:

"'Freezing of various parts of plants, and then subjecting them to rapid thawing by exposure to the rays of the sun, causes their death by first extracting water from the solids and causing its aggregation in a crystalline form, and then by sudden melting causes drowning out of neighboring parts, while more remote portions will suffer from want of water. If the thawing is slowly accomplished the water has time to diffuse and restore the normal condition of imbibition. In this way is to be explained the fact, which may be frequently observed in cold, Spring, or Autumn mornings, that of the parts of plants which are frozen, those which are exposed to the direct rays of the sun are killed, while those which are protected from the sun's heat thaw out gradually, and regain their vitality. So, also, red blood corpuscles may be frozen and gradually thawed without being destroyed, but if rapidly thawed are dissolved. On this fact, undoubtedly, rests the practical point that frozen animal parts must not be rapidly warmed, but have their circulation only gradually restored; hence, the common practice of rubbing with snow.'

"There are also to be taken into account the damage to the tissues and the risks of inflammatory reaction.

"There is an excellent chapter on 'Food Stuffs, their Composition and Nutritive Values.' This is followed by an elaborate and very detailed account of the various processes of digestion. The chapters on the 'Circulation' and 'Respiration' are quite abreast of the most modern teaching on these subjects, while the chapter on the 'Physiology of Movement' gives a more complete account than is to be found in any other text-book. The value of the portions on the nervous system and special senses is much enhanced by the colored diagrams. We can strongly recommend the work as a thoroughly reliable text-book on physiology, and one which is likely to remain so for many years. The publisher has executed his share of the work in the best American style, as might be expected from one to whose great enterprise we are largely indebted for such a remarkable work as the *Annual of the Universal Medical Sciences.*"

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. A Yearly Report of the Progress of the General Sanitary Sciences Throughout the World. Edited by Charles E. Sajous, M.D., Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, Etc., and Seventy Associate Editors. Assisted by Over Two Hundred Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. 1889. F. A. Davis, Publisher. Philadelphia, New York and London.

The industry, push and energy of an American publisher and editor have never been more conclusively demonstrated than in this remarkable work of five volumes. If it were a text-book on some medical or surgical subject of which numerous editions could supply the demand for ten years, and in which there would be comparatively little cost and less labor to get out new editions as they might be required, it would not be a matter of surprise to see a publisher undertake the task. But when we know that it is only a résumé of the advances of a single year, and that another year demands an entirely new work, in which we can truly say the type will be the only available stock on hand with which to reproduce that of another year, it is nothing short of a marvel to us—granting the excellence and whatever other merits it possesses—that the work can be published on a paying basis. However, with this the profession is not concerned, except that it cannot fail to feel a debt of gratitude for the beauty of the mechanical execution, and it ought to pay the debt by a wholesale subscription to the work. As a matter of fact, it will soon become a necessity for any man who pretends to keep abreast of the times, and especially those who are not within the range of large libraries, to have this work as a constant hank-book of reference.

In the consideration of the book itself, we may say, first of all, that the choice of associate and corresponding editors has fallen upon most worthy shoulders, many of them recognized authorities on the subjects of which they give a review—men who have devoted their time to the special branches, and who are therefore constantly on the alert for any material advance in their respective lines. There is really so much in the different volumes that if the work has any fault, it is the astonishing amount it contains; and yet, no man could feel that he had squandered his money if he bought the five volumes, to read only the subjects in which he might be interested, all of which might be contained in a single volume.

The simple statement of the Table of Contents would take up much more room than we could give it; and while we may have occasion to mention certain articles or subjects in the several volumes, we must repeat that the whole subject of the "Medical Sciences" is faithfully and fully reviewed. First of all, the new features in this second issue of the Annual are the references in the body of the text (by numbers) to the journals from which the facts are garnered, thus giving a ready means of reference to the original sources for any more detailed account than the text contains; secondly, the presentation, side by side, of the English and foreign weights and measures (embracing thermometric systems), in this way saving the trouble to each party of making such a calculation; and lastly, an index to each volume as well as an index to the whole.

Of the articles that were especially agreeable to us in the first volume, we may mention the one on "Diseases of the Stomach, Liver and Pancreas," by Dr. Bruen, to which there is attached, besides its intrinsic worth, a melancholy interest from the fact that death has removed the possibility of our again reading from the interesting pen of this talented writer; and next the article on "Fevers," by Dr. Wilson, in which typhoid fever, that ever interesting and perplexing disease, receives so much and such valuable consideration. The heart, lungs, intestines and kidneys occupy the other parts of this volume.

Volume II. contains Diseases of the Brain and Spinal Cord, with Peripheral Nervous Diseases and General Neurosis; Mental Diseases, Diseases of the Uterus and Appendages, and of Pregnancy, and Diseases of New-Born Infants and Children. The first named is the subject to which proportionately by far the larger part of the volume is given, and the work is done in a full and satisfactory manner. Diseases of the Uterus and Appendages is next in the order of merit and fulness of treatment.

Volume III. takes up Surgery. It is really a perplexing problem to say what article is most interesting. They are all well written, replete with information and by excellent men. Dr. Senn writes on the Surgery of the Brain and Nerves, and his article is full of interesting diagrams; Dr. Mears, on the Surgery of the Abdomen; Dr. Keyes, on Surgical Diseases of the Genito-Urinary Apparatus in the Male, and here, too, we have illustrations of late and useful inventions; Dr. Kelsey, on Diseases of the Rectum and Anus, uses most of his space in discussing Whitehead's operations for hæmorrhoids and colotomy; Dr. Conner, on Amputations, Excisions, etc.; Dr. Packard on Diseases and Injuries of Arteries and Veins; Dr. Stimson, on Fractures and Dislocations; Dr. Agnew, on Gunshot Wounds, Snake Bites, etc., and so on through the various surgical fields, each author giving us new delights. We were rather surprised that Dr. Stimson made no mention of his own admirable method for the reduction of dorsal dislocations of the femur, although his article on these dislocations was perhaps not written until after the manuscript for the "annual" had been turned in.

Volume IV. deals with Skin Diseases, the Eye, Ear and Throat, Legal Medicine, Examination for Life Insurance, and Urinalysis; the first-named by Dr. Van Harlingen, and the second on Ophthalmology by Drs. Oliver and Gould, are the two on which most labor seems to have been spent. Both are frequently and often well illustrated.

Volume V. takes up odd points here and there: Therapeutics, Toxicology, Climatology, Hygiene, Histology, Bacteriology, Embryology, Physiology and Anatomy. Each probably contains many new and interesting facts for the student in its branch.

The work is a monument to American enterprise and deserves the abundant patronage it has received.

PROMPT AID TO THE INJURED. A Manual of Instruction in the Principles of Prompt Aid to the Injured. Designed for Military and Civil Use. By Alvah H. Doty. M.D., Major and Surgeon, Ninth Regiment, N. G. S. N. Y.; Attending Surgeon to Bellevue Hospital Dispensary, New York. New York: D. Appleton & Co. London: Caxton House, Paternoster Square. 1889.

In this small, but comprehensive volume, intended more particularly for our National Guard, the author has taken upon himself a very difficult task, viz., that of instructing those who have had no medical education in the art of taking care of those who, in an emergency, require medical or surgical aid. The period which intervenes between the time at which an accident happens and the appearance of a surgeon, is a most important one, and one in which a few clear rules clearly executed will be the means of saving a life, or one in which ignorance of those same few rules will allow that life to go out. Or, even though life itself be not endangered, how much suffering can often be averted by some one simply knowing what to do. In the first few chapters the author explains in a clear, concise manner the use and functions of the different structures and more important organs of the human body, dwelling more particularly on the bones, heart and lungs. The very important subject of bandages, dressings, etc., is handled in a masterly manner in chapter viii. Although the author must know that it is almost useless to expect a layman to have a proper appreciation of antisepsis, this has not deterred him from laying down a few simple rules which, if carried out, would be of benefit. In the treatment of sprains, we think it would have been well to have mentioned the use of hot water, as it certainly is one of the best applications that can be made. In chapter xvi, on asphyxia and drowning, Sylvester's, Howard's and Hall's methods of resuscitation are given with illustrations, and can readily be comprehended by anyone. The author finishes his book by giving a number of rules for the transportation of the wounded as laid down by Major Charles Smart, Surgeon U. S. A. The book is well written; it is clear and concise. The author adheres to no stereotyped plan, but states what is useful, leaves out what is useless, and makes many suggestions which, if remembered by anyone at the scene of an accident, will be productive of much good. Another pleasing thing about it is, that the fact is impressed upon the reader that he must do so much and no more, and then wait for the surgeon. The book is entitled to a favorable reception, and we hope it will receive it.

ESSENTIALS OF MATERIA MEDICA AND THERAPEUTICS. Arranged in the Form of Questions and Answers, and prepared especially for Students of Medicine by Henry Morris, M.D., Late Demonstrator Jefferson Medical College, Philadelphia; Co-Editor Biddle's Materia Medica; Visiting Physician to St. Joseph's Hospital; Fellow College of Physicians, Philadelphia, etc., etc. Philadelphia: W. B. Saunders, 913 Walnut St. 1889.

This very useful little volume is No. 7 of Saunders' Question-Compends, a series which has done much to lighten the labors of the student and young practitioner. As its name implies, it is the very essence of Materia Medica and Therapeutics boiled down and presented in a clear and readable style. Of course it does not pretend to go into the subject deeply and exhaustively, but it certainly does give just such facts as are useful to the student in his regular quizzes or when preparing for examination. There is just one point to which we would like to call the author's attention. On page 88 in speaking of the different preparations and doses of opium, he says—"Magendie's solution (not officinal), contains of morphine gr. xvj to the ounce. It has been used hypodermically, but should not be employed." The first part of the statement is unquestionably true, but concerning the last we ask—why? We know that in preparing it, the druggists occasionally put a drop or two of carbolic acid, or a grain or two of salicylic acid in it to preserve it, but usually, and especially in the larger towns and cities, they merely dissolve the requisite amount of morphine in distilled water, and only prepare a small amount at a time so as to always have it fresh. It is such a convenient and certain preparation and has been used so much in both hospital and private practice, with no untoward results, that we must say the author's simple statement surprised us very much.

SANITARY.

THE STORAGE OF LIFE AS A SANITARY STUDY.*—In one of the most charming books of natural science, "The Select Works of Antony van Leeuwenhoek," the Immortal Beadle of the little town of Delft, and the first and in some respects the greatest of all the microscopists, there is an essay in which the philosophic writer enters into a speculation on the duration of life of different classes of animals. With that singular foresight which marks the work of this original investigator, he indicates that certain animals which present the shortest term of life produce the greatest number of young. He adduces the shrimp as a case in point. The shrimp propagates by eggs, and in such numbers that once, he says, when he began to count the eggs in one shrimp, he had not got through the mass of them before he was tired and gave up the attempt. He then proceeds to compare these small and prolific animals with mighty monsters like the whale, and points out that such monsters bring forth their young perfectly formed, and only a single one at one time; for if these larger animals were as prolific as the smaller, the smaller would all be devoured by them, the sources of food would be stopped, and the feeder and the fed would soon become extinct.

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* Address delivered at the Royal Institution before the Sanitary Institute on Thursday, July 12, 1889. Edwin Chadwick, C. B., in the Chair.

From the contemplation thus started, Leeuwenhoek proceeds to speculate on the length of life of the largest creatures, like the whale. Reflecting on the enormous bulk of these creatures, and on those huge bones of theirs which are in many places fixed up for public view, he conjectures that some of them might be of the age of a thousand years and upwards. For he says, "I am persuaded that fishes never die of old age, forasmuch as their bones, being always of a soft texture which never grows hard, may always be extended, so that the fish themselves are always growing larger. But terrestrial animals are exposed to the changes of atmosphere, whereby their bones grow hard, and when the bones are hardened the body cannot be extended to a large size."

If this argument of the illustrious first microscopist were true, we sanitarians who have for our special business the art of prolonging life —human life especially—ought to set at once to work to find out a plan by which the bones of human beings could be kept in such a state of softness that they could continue to expand and extend, so that giants should be re-established like the race of giants of antiquity. And pray observe that the idea is not really absurd because it is at this time impossible. *Cæteris paribus*, it is probable that symmetrical and healthy size does largely determine the question of age, and that in the history of the natural life of man there may have been conditions in which human beings of immense build and of prodigious strength did inhabit the earth, and did live to an extraordinary age, according to our present idea of human longevity, because they were giants. To this observation let it also be added that in the life history of other animals there are, apart from size, other examples of remarkable length of life. There are instances of fish—the pike as the best known instance—in which life has been maintained for a period of over two hundred years. There is, I believe, at the present time, in the island of Mauritius, a tortoise, a photograph of which I have here, which has lived between one and two hundred years. An elephant has been known to live one hundred and fifty years, and I have seen a parrot which, on evidence that was unmistakable, had turned its hundredth year.

There seem, indeed, to be amongst certain animals natural periods of life, which, by comparison with the common period of the life of man, are extremely prolonged. The animals, by some peculiar process as yet but little investigated, hold life as a long possession, and to this faculty I apply the term "The Storage of Life," applying it to-day to human life, because up to current date the sanitary question is confined mainly to the interests of members of the human family, and because the storage of life by the aid of sanitation in that family opens up for us, as sanitarians, a new idea of investigation and labor.

From the facts at our command, there is evidence that individual storage of life may be far greater than the vast majority of people either expect or hope for. The mean duration of life in this country may be taken at forty-one years. But we have instances upon instances in which this storage of life is doubled, and some in which it is trebled. Quite recently I had, at the same time, in the consulting room three gentlemen whose united ages reached the total of 262 years, or over 87 years each, and each with a fair promise of from four to five years more of life at least. I also, within the present quarter, saw on the same day two gentlemen whose united ages gave 186 years, or an average of 93 years each. I have seen, and carefully examined physically, a woman who had attained the age of 105 years, and who lived afterwards for three or four years; and I once conducted an autopsy of a man who had passed his ninety-third year.

In all these examples, and in many others which in the course of a long professional career have come under my observation, there was nothing in the social condition of the individuals concerned that could of itself account for such an unusual storage of life as that which they presented. Two of those specially referred to were men of the highest class of mental power; the other has come down from one of the oldest of the noble families of Europe, and in the course of a most checkered and active career has been exposed to singular pressures, mental and bodily; a fourth has fought his own way from the lowest position to one of affluence and power; whilst the oldest of all was, from first to last, in abject poverty, and at the time when I visited her was in a work-house, in which she had lived for years and in which she died.

Facts like these, which are, indeed, so common that the narrative of a few of them soon suffices, indicate that the sanitary problem, how to increase the storage of life in the individual, must, after all, be a very simple one indeed when the conditions leading to it are properly appreciated.

To break ground on this question, and to show that the question belongs to us as sanitarians, is the object of the present discourse. It is a study we especially ought to cultivate. To the great public our details about drainage, ventilation, baths, disposal of sewage, house construction and the like are becoming, by constant repetition, utterly wearisome. Here we have a subject which is new for study, which opens up some of the most important researches affecting the history of mankind, past and present, and which will be practically useful for the future.

THE PROBLEM STATED.

The problem that lies before us may be briefly stated as follows: Certain proofs of the power of the human body to lay or store up life to a prolonged period are admitted. What are the conditions which favor such storage, and how can we promote such conditions?

The conditions are the following, and in the order stated:

1. Hereditary qualification.
2. The virtue of continency.
3. Maintenance of balance of bodily function.
4. Perfect temperance.
5. Purity from implanted or acquired disease.

HEREDITARY QUALIFICATION.

I put the question of hereditary qualification in the first place because I feel sure, from observation and collection of data, that this is its true position. The fact is one of the most singular in the whole inquiry, and perhaps the most instructive. When the hereditary faculty for the storage of life is implanted in an individual body for a few generations, it becomes, so to speak, an established principle, and the representatives of it, having once arrived past the period of life in which accidental deaths of various kinds are causes of mortality, continue to live, often in opposition to the most adverse influences to the continuance of life, beyond the average term of life. The person gifted with this faculty of storage may be of fragile and delicate build of body, may even be deformed of body, may be of dull or of bright intellect, may be of cleanly or of uncleanly habit, may be placed in what would seem the most unfavorable position in life, or may be literally in want, and will yet continue to live on so as to see the whole of his or her more fortunate neighbors fall; nay, may even be so tired of the continuance of the monotony of the everlastingly recurring phenomena of life as to be envious of the fate of the dead who have found their rest. Such a person may also be what is commonly called "an ailing body," not from the existence of any well-marked organic disease, for that is incompatible with the condition requisite for vital storage, but from a general feebleness and want of tone which affects alike unfavorably the mental as well as the physical powers. It is not necessary to convey by this statement that feebleness of the kind here described is a part of the required condition for storage, since they who are of the very opposite condition, the very strong, may possess the self-same faculty; but the existence of the faculty in the weak as well as in the strong must be affirmed. It is right also at this point to state that the storage of life in those who possess it in the most marked degree is and belongs to continuance of the process of life, not to the power of resisting interruptions to it in and during periods of strength and youthfulness.

I can find no shadow of proof that those who have attained the oldest life have done so by virtue of any special physical ability inherent in them to resist the most fatal diseases. They have pulled through diseases, but they have not evaded them, and there is no evident proof that their special quality for a long life has materially aided them in the pulling through. The evidence is rather in favor of the view that, after having passed through the ordinary battles of disease, they have continued to hold on and enjoy the inborn capacity to live longer than their contemporaries in the race of life.

We have seen that peculiarities of body which do not seem to be favorable to the storage of life are, notwithstanding, compatible with it. Are there any conditions or peculiarities of body which are signs of its existence in the individual?

Whatever peculiarities of this kind exist are strictly of the hereditary character, and are conveyed to the observer in the study of temperaments, rather than in any striking characteristics of strength or beauty. Thus, with whatever general appearances of body they may be combined, there are two temperaments which are incompatible with life storage, and two which are so compatible with it that either in their single or their combined form they are, as I think, essential to its manifestation.

The two hereditary temperaments which, either singly or in combination, are incompatible with storage of life are the nervous and the lymphatic; the two which are compatible, and perhaps necessary, are the sanguine and bilious. If we divide life into seven periods: (1) from birth to fifteen years—completed childhood; (2) from fifteen years to thirty—completed adolescence; (3) from thirty years to forty-five—completed manhood or womanhood; (4) from forty-five to sixty—ripened manhood or womanhood; (5) from sixty to seventy-five—first period of decline; (6) from seventy-five to ninety—second period of decline; (7) from ninety to one hundred or upwards—period of senile maturity; if we divide life into these seven parts, according to age, we may fairly apportion the life-value of the temperaments as follows, supposing the representatives of each temperament to run their natural course.

The storage of life in the sanguine temperament would be extended to the sixth stage, with an inclination to the seventh.

The storage in the nervous temperament would be to the fifth stage, running into the sixth.

The storage in the bilious temperament would be to the sixth stage, at most.

The storage in the lymphatic temperament would be to the fifth stage.

Better, perhaps, than any of the single temperaments would be a mixture of the sanguine and the bilious; and, indeed, all the examples of special life storage which I have met with have been of this hereditary admixture.

The organism which is best constituted for storage is therefore capable of being identified, and stands out, so to speak, in its own colors. The color of the iris or curtain of the eyeball, always an excellent test, is a light hazel; the hair is a dark brown; the color of the skin is inclined to be florid, and the lips and eyelids are of good natural red—never pale, as in the pure nervous temperament, and never of a dark bluish tint, as in the lymphatic or lymphatic bilious. In this mixed temperament of the sanguine and bilious, a preponderance of the sanguine is, I believe, always an advantage.

The qualities here enumerated as represented in an organism well fitted for the storage of life are absolutely of hereditary character. They spring from combinations of parentage, and when the combinations are unalloyed by the introduction of any disturbing elements of disease, the conditions for long storage are fortunately combined.

But what is the precise difference, physically, of a human body so constituted by hereditary, as distinct from a body less favored, and that can give the capacity of storing up life, it is impossible to say. To declare that it is something derived from birth is to declare nothing more than a fact which, if we try to trace it back in its ancestral sense, is lost in the inquiry; that is to say, though it may be traced back for generations, it is lost at last, historically, in regard to the cause of its origin.

There are, however, a few facts which are worthy of regard. When the tendency to long storage of life is present, by heredity, it need not be so from both parents. The tendency may descend strongly in one line, but is always most pronounced when it descends through both. When it descends on one side only, it is strongest on the male side.

If a good number of facts are collected in which the ages of parents, paternal and maternal, are discovered, the readings of the storage of life are so regular that a sufficient number would, I believe, yield an absolute record. I once had the opportunity of reading a series of histories of families whose paternal and maternal life-pedigrees were traceable with reliable accuracy. They were derived from insurance records, and if not always so complete as was wished, were good of their kind, and gave results that may be accepted as indicative of the natural truth. From these readings it was elicited that whenever the life-pedigree can be traced through the parental lines for two complete generations, the value of the life of the third generation—accidents being of course excluded—is predicted with a certainty that is rather alarming to timorous minds.

There need be no risk, commercially at any rate, in accepting the conclusion which the facts declare. If, for example, the age at death of the father and mother can be obtained accurately; if the age at death of the paternal grandfather and grandmother can be obtained; and if, finally, the age at death of the maternal grandfather and grandmother can be obtained, there will be at hand for calculation the life-storage of six persons. Presuming, then, that the said six persons all reached their full age, the simple sum of dividing the mean result by six will give the average length of each of the lines of descent, and that result, whatever it may be, will, with certain exceptions to be named later on, be the commercial value of the age of the third generation to which it refers. Thus, if the sum total of the ages of father and mother, father's father and mother, and mother's father and mother, be, say, 360 years, the natural life-storage of a person descended from them may safely be taken as sixty years.

The exceptions seem to run as follows: Sixty years is a turning point, or point of equality, at which point the indications of the final stage of storage are all but absolutely represented. In other words, sixty means sixty all round. But if the combined term of years equalizes out at something under sixty—say fifty—then the term belonging to the surviving representative would not be fifty, but something under it—say forty-eight. If the term should be still lower—forty, for example—the reduction of the last living representatives would be proportionately reduced. On the other side, if the mean value of life of the six standards exceeded the equal point of sixty, then the value of life-storage would be improved. I should estimate that a mean of eighty years, based on the standard of six antecedent lives, would yield a product that might be taken at ninety years at least; a mean of ninety, a product of a hundred years, and a mean of a hundred a product of a hundred and twenty, or even a hundren and thirty years.

It may reasonably be asked why and where there should be any change on either side. With a steadily decreasing storage of life, why should not families die out altogether, and with an increasing value of life, why should not families go on living continuously after the course of a few generations?

To the first of these questions, the answer is that failing families do die out. To the second, it must be admitted that there has been no sufficient time in the history of mankind during historical dates to allow of an answer being given to the inquiry. For my part, I do not see, theoretically, any reason why, in a perfectly constituted human organism, there should be any necessity for the cessation of the storage of life. I see a very obvious necessity for death in a world which is always eating up its vital energy by the prodigal method of over-multiplying the organic forms which need the vital energy for their own existence, because the organic forms must destroy one another in order that the living may continue to live, and this, no doubt, is the cause, wholesale, of death. But in place of excessive reproduction of new forms, put reconstruction of existing forms, and there does not appear to be the least reason why the individual storage of life should cease.

If this should be true of one species, it should be equally true of another, and should include man in its reading. In other words, there is no such thing, necessarily, as death, except from accident, violence, disease, or ignorance of the means for sustaining the natural function of vital reconstruction.

The reason why certain members of the human family possess an unusual faculty for the storage of life is a faculty that is born, not acquired, and which resembles other personal attributes derived by gradual evolution.

When I say that the faculty is born in order to be transmitted, I mean that this must be so according to our present position in regard to it, a point of very considerable and, in fact, of vital moment from a practical outlook. For were it to be admitted on unassailable grounds that hereditary descent of faculty is absolute, and absolutely necessary, then all efforts to make general what is now exceptional would be so much time lost in ignorance of principles. The argument, however, would not be just, because there must have been some period in the lives of families when the gift of long life became a family characteristic.

We need not suppose that the gift commenced all at once, for that would not be probable. We must rather suppose that it was the work of a gradual evolution, and it is quite just to suppose that it is going on even now in some favored families, or in some localities, or even in some countries. I have not had time to look the matter up so as to show from strict details that the storage of life is improving in our modern England, but I have not a shadow of a doubt that it is, and that the number of persons who reach the classical three-score years and ten at this moment is much above what it has ever been in the history of our country. This tendency is one of those processes which grows by what it feeds on, and we may justly expect that it will be continued in the future if it be cared for and cultivated, notwithstanding the fact which Mr. Chadwick pointed out in his report of 1842, that centenarians, in some places like Geneva, were rarer at that time than at any other previous times, when the value of life generally was less favorable.

If it be the fact that the possession of length of days depends primarily on heredity, we, as sanitarians interested in this question, and accepting the study of it as part of our daily work, have to inquire how far we may assist in improving that heredity towards longevity. We need not be deterred in this course by a feeling, sometimes expressed, that if we should succeed in producing a long-lived race, we should thereby secure also an overflowing race, which would overpopulate the world. It is not strong and long-lived people who produce a large and helpless community, but, as we shall see in the sequel, feeble and short-lived populations.

Towards the accomplishment of this object the first consideration is the selection of lives for parentage. Unless parentage be sound, it is clear, from what has been already said, that long storage of life in offspring will certainly fail. If such a social miracle could be performed as the fashion of a proper arrangement, before marriage, to prevent, generally, the marriage of health with disease, or, still more urgently, the intermarriage of disease, there would soon be an advance in the value of life on a scale grand in proportion to the extent to which it was carried out.

It would seem at first sight as if there were here a hopeless problem to solve, a hopeless position to attack. It was so not long ago; but I have noticed of late years, and much sooner than might have been expected, a desire on the part of marriageable persons to avoid the many dangers to health which are so likely to spring from unhealthy unions and from unions likely to lead to shortness of life. One essay, for example, in my own book, "Diseases of Modern Life," on the Intermarriage of Disease, has brought, I find, to me alone no fewer than thirty-two inquiries on various points touched on in that very short chapter, and has led, notably, twice to the sensible and friendly dissolutions of engagements which carried out would almost of necessity have favored consequences of the most disastrous kind. We may therefore reasonably hope to effect, even within the narrow limits of one generation, a true advancement in this direction if we give our minds to the simple subject of the selection of the fittest of the human species for the continuous representation of humanity.

In the study of the sanitary branch of human knowledge thus referred to we should not be opening any new path, but rather be helping to widen an old one, and making it all the more popular, by the addition to it of physical as well as moral foundations. For ages past the Church has been doing good sanitary work in the care which it has taken to prevent marriages of consanguinity. It seems to have been seen from very early times that intermarriages of persons of the same family led to concentration of the vital failures of the family and to serious disasters from that cause. The wise provision was therefore instituted by the Church of breaking up the family to a considerable but not to a sufficient extent. What miseries a rule of the kind named checks is indicated by the most common evidence, if such evidence be only looked for. It is enough for me to give one proof alone to set it forth in all its solemnity of purpose. I have on my notebooks an instance of one family, including in it three generations, in which seventeen persons were all deleted, to use a very significant expression, by the one factor, the intermarriage of the first cousins in whom two diseases—consumption of the lungs on one side and cancer on the other—had found an introduction and a diathesis. From one or other of the diseases named, or from curious admixtures of the diseases, which need not be described at the present moment, every one of the family group died prematurely. I admit that had they been all gifted with full capacity for life-storage they might have been models of longevity although they were related to each other; but, inasmuch as there would be no reasonable chance of any such concentration of vitality in so many members of one family at the present stage of human progress, the separation of families, for the widest selection of the fittest to live, is the soundest and most practical method.

The question is a sanitary one in the strictest sense of the word, and no argument of a sentimental kind, indicating acknowledged difficulties, ought, for a moment, to stand in our way. When we desire to raise into active existence horses for the race or the plough, sheep for the prize show, or even some specimens of flowers or plants for the sake of economy or beauty, we do not hesitate in determining to take the only natural means that are open to us to gain the required result. It is not until we come to the most precious specimen of all life, *man*, that we pause and practically cease to take any pains whatever. We are then so led away by sentiment that we permit the dearest interests to have the go-by, in order not to wound tender sensibilities; or if we do interfere, it is for the sake of some much lower and baser motive than health and good vital storage. I call this bad sanitation.

THE VIRTUE OF CONTINENCY.

The capacity for storage of life lies first in the force of heredity; but there are, as aids even to that force, and as aids also to a force of life that may not be exceedingly strong, certain other influences which we sanitarians should be the last to ignore or forget. These may be considered as secondary influences, in some degree; and yet, at the same time, they may be reckoned as possessing powers that in other points of view are of primary importance. I mean by this that they may become bases of health on which heredity itself may be fostered until it becomes a solid foundation. I have named these influences in the opening passages of this address, and I proceed to study the first of them under the head of the virtue of continency, or that virtue which would provide for the limitation of the family circle to such a degree that the actual necessities of the family may never be dangerously taxed by the largeness of it. I maintain that this is strictly a sanitary question, and that no consideration lying before us as sanitarians is more important. In these days, when the shoe pinches so keenly on the sensitive point of over-population, we are being visited by outbreaks of the extremist views and plans and devices for preventing the exuberance of human life; not everywhere, not all over the face of the earth, but in those centres of the earth where, by causes which may almost be called accidental, the numbers of population have exceeded the means at command to keep them in a condition which is, in itself, so artificial as to rank amongst the abnormal conditions of humanity. The proposals on this matter which some would force on us are themselves abnormal, and, under natural states, would inflict a greater evil than they are intended to prevent, that, namely, of depopulating the earth altogether without controlling the passion which is the root of all evil. This is evidenced at the present time in France, where the systematic decrease of the people is producing, without any corresponding increase of morals, as serious an anxiety amongst some of the most thoughtful minded there as the excessive growth of population is creating anxiety amongst the thoughtful minded here. It is our duty to avoid these extreme views, and, free from panic induced by temporary social and political influences, which are purely human and are sure to be rectified under a better and more enlarged human understanding, try to bring man back to a complete accord with Nature, without infringing even one of her most important laws. Our duty in this respect lies in inculcating the very simplest of all virtues—CONTINENCY OF LIFE, and in favoring all the conditions which render that virtue possible. We know, fortunately, what those conditions are. We know that under a social state in which health of life and wealth of life would co-exist we should have a state where a noble civilization would be combined with a very frugal mode of existence, with moderation of passions and pleasures, and with such restraint of character that violent extremes of any kind would never be exhibited by those who wished to be accounted sane. With this would be connected all the external sanitary requirements for the maintenance of mental and physical health; and to these advantages would be added a due prudence in respect to marriage, so that marriages would not be contracted until the married had the means necessary for the maintenance of offspring. This is an essential provision, since death in every degree, great or little, is as surely the shadow of birth as the shadow of the twig of a tree upon the ground and the total eclipse of the omnipotent sun are one and the same phenomenon,

Some will say that the method here propounded is too slow in its action to meet pressing emergencies, although it may be a good method when, by a bolder plan, a preliminary reformation has been secured. But I venture to answer that no preliminary reformation is wanted, because the natural reformation covers all the ground, and because every unnatural change which may be established only makes it a harder task to come back to nature. At this moment we may be erring and straying from the right way like lost sheep; but there is the redeeming virtue in the fact that as we are only erring and straying we may be saved, while by other methods we are not merely erring and straying but are systematically and intentionally going from the right; are not lost sheep but headstrong ones, rushing into dangers infinitely greater than those we are anxious to avoid, and planting roots of evil which it will take ages of learning, wisdom, self-abnegation, and tribulation to remove; planting perdition that we may relieve poverty.

There are other persons who will agree with me on the question of method, but who will hold that the course I would suggest is simply impossible, and one that has never been, even under the most favorable conditions, attainable. To any objection of this kind I reply from direct evidence showing perfect practicability, and that without going into the poetical regions of the past or out of the immediate history of our own era.

In the little community of Montreux in the Vaud, in Switzerland, a parish containing 2,833 persons, a pastor there, M. Bridel, kept a record for many years of the social life. It was a model sanitary record. The births were at the rate of one in forty-five, the deaths one in sixty-four, or at the rate annually of 15.62 in the thousand living. The conditions and the consequent health of so favored a community were sustained by the comparative slowness and circumspection with which the successive generations of human life were brought into the world. There was no method of interruption to the natural life that could lead to any moral wrong; the social state in which the happy circumstances of one generation were handed down to the next generation "was due," says Sir Francis D'Irvenois, who relates the history, "simply to Swiss forethought and to the virtue of continence."

To this picture of a model community let us take a contrast, existent at the same time, and told by the same learned authority.

This contrast was found in the Russo-Greek community at Nisni Belgorod, a community of the same size and, if it had willed, of the same morality. Here the births were one in seventeen, the deaths one in twenty-five. "Mark," says D'Irvenois, "the figures which announce the proportional mortality of these contrasted communities. In the Russian community one twenty-fifth disappeared annually; in the Swiss one sixty-fourth. The Russian generations passed away more than twice as rapidly as the generations of Montreux. Who would purchase the advantage, equivocal at best, of a triple number of births, accompanied by this enormous number of premature deaths? In Montreux, too, four-fifths of those born reached the age of twenty, whilst in the Russian district out of one thousand baptized six hundred and sixty-one perished before their fifteenth year. The nuptial garments of the mothers were the destined shrouds of the first-born. In the Russo-Greek community the march of life, seemingly so fruitful and rapid if it had been calculated by the birth-rate alone, was, in fact, the most murderous in Europe. In the Swiss community the march of life, so seemingly slow if estimated by the same method, was towards health and a steadily and improving vital progress.

As bearing on the storage of life, this lesson, derivable from two diverse populations, is rigidly relevant. If life must be stored fully, the first stages of it must be strong and the last stages of it must be long; for it is in the first stages of it that the duration is secured, in the last that it is realized. We must have a good first childhood if we would have a good second childhood, and then the full measure of life is secured.

The evidence is also fair that if we could, by our labors in the directions named above, increase the storage of life in the individual, by what may at first seem to be artificial cultivation, we should in the end cultivate the heredity; for this is precisely what nature does in all her vital processes. She stamps everything that is vital and lasting, through time. Time is her means of improvement in both method and work. Time takes the place, unconsciously, of design or purpose to those who do not follow or understand her ways, clearly to those who do.

It is, in fact, by this very method that Nature maintains the balance of life altogether on the earth. When there is rapid production there is rapid death; when there is slow production there is, *cæteris paribis*, slow death. Fewer people, longer life for the few. But slow production is a sanitary measure, and it and the results of it must be the resultant of purely natural causes. Strive by the unnatural to pervert the natural, and though we may succeed in one way we will fail in another.

Limit the numbers of a race, limit growth by the imposition of unnatural laws, and the triumph will be the development of a limited population of an abortive type. We see this in local attempts to play the fool with Nature. The wise countryman of Celestial soil checks the natural growth of his female child's feet by binding them firmly up in bandages. He succeeds to perfection, and he produces a cripple. What is true of the local is equally true of the general; a population may be limited in numbers by infringement of natural laws, but the certain result will be that which sanitarians would deem the worst of work, the promotion of a race in whom the good storage of a good life would be simply impossible. This is just what we do not want. We want to raise a race on each of whom every god has seemed to set his seal,

"*To give the world assurance of a man.*"

From the study of the topic which lies now before us many questions of practical moment spring, and one above all, namely, how we as sanitary teachers can so proceed as to influence the world towards the adoption of the rule of continency of life? I believe we are already doing that in every effort we make to better the condition of the people of all grades and ranks of life. When we strive to give cleanly and comfortable homes, to find and promote rational amusements, to cultivate and distribute a pure and delightful literature, and to teach those habits which lead to purity of body as well as mind; when we lend ourselves to the maintenance of healthful bodily recreations for members of both sexes; and, when we discover and bring into action measures of an innocent and useful character in which the members of both sexes can reasonably participate without feeling themselves separated by some absurd and supernatural barrier as if they were human beings of different flesh and blood—then we are doing the very choicest work for the regeneration of the race, for making it a race that shall be the parent of a greater race, and for checking that overabundance of an inferior race which is the sign and seal of bad blood and of degraded vital power of body as well as mind.

Let us go on in this course; let us be led into no other and we shall leave a record which we may, it is probable, never behold, but which will be none the less clear to other eyes, that shall see it when ours are closed forever.

THE BALANCE OF BODILY FUNCTIONS.

The sanitarian, in the new work which lies before him can render the most telling assistance to the good storage of life and to the storage of good life, by teaching the first steps in the early days of the journey of life. But there is another course before him which is not less important and which relates to the art of training the body in such form that all parts of it shall be kept in perfect balance and, if I may say so, in equal health. It has been too much of a rule to look upon the work of the trainer as that of one who is ministering to the amusements of life or to the simple teaching of those who, for a professional purpose or for amateur display, are about to enter into some trial or competition of strength or of skill; and, indeed, I have heard prudish people object to training on this very ground, that whilst it is all right for those who have to get their living by it or who wish to show themselves off as particularly clever in winning races or other contests of a physical class, it is out of place in all cases where it is the desire to be well brought up and to be of ordinary good deportment. This, however, is merely putting the cart before the horse. These systematic trainings are just the sort of trainings which actually break the balance of parts, which tend to shorten, and which often do shorten, the vital powers of some of the very best endowed of mankind for the sustainment of a long existence. Such local overtraining is really a worse plan than that of employing no training at all, and is only equal in badness with that training into one kind of exercise by which special organs of the body are forced into quick and mature development before the other organs have reached the same development or have even reached their maturity. I think it worthy of special comment that in every person of very advanced and healthy life whom I have carefully examined as to the physical state and as to the state that has led to the longevity, this fact has come out first and foremost—that the organic functions were still acting in proper accord and perfect harmony. A comparatively weak body may thus be seen to have the capacity of storing up a long life and of passing by a much stronger body in the race. This was the actual case in the oldest person who ever came under my own direct observation. On the other side I do not remember anyone of fine and vigorous frame of body and mind who, dying prematurely, did not die from the failure of some one vital organ almost exclusively. As the one shot which strikes the vital spot in a bird is the cause of death, so the one blow or series of blows on one organic structure in the well-built human form is the constant cause of collapse in the premature failure of that form. We have here before us, presented in the most tempting mannner, a study second to none in the range of sanitation. It is a study which opens up to us the widest reach of sanitary practice and skill, extending into the daily life of men, women, and children of every rank and of every occupation. At present, as a study it is far too loose and crude to be called a branch of knowledge, while too often it is merely offered to the world as a piece of flagrant and transparent quackery, which deceives the ignorant and, like the bone-setting sham in medicine, does an incalculable amount of injury. We have to reduce this method of equal training of the organs of the body for regular and systematic work to a regular and systematic science, so that it may be taught in elementary schools, become a natural part of the national education, and be so impressed, intelligently, on the mind as to be a duty for observance and conduct throughout the whole of life.

It is impossible too strongly to impress the fact that for long storage of life a physical training of the body that shall secure a uniform strength is a primary lesson in sanitation. We, as an Institute, ought to take up this question as one essentially in our own domain. It comes most naturally before us, as health in relation to physical movement, and it would form an admmirable subject of a special course of lectures; not a mere ephemeral course, but one that should go on from year to year with a constantly improving strain, adapted to the advances, the necessities, and, I may say, the fashions of the age.

The elements of this part of our subject are simple, but none the less effective on that account. We have to keep the public mind open to the fact that a weak and well-balanced body is practically a stronger body than a strong and unbalanced one; that a weak body may, by properly balanced training be made one of great power for the retention of life, and that a body of original strength and beauty may be made of unusually long or of unusually short life according as it is trained into the conditions leaning to the one or the other.

PERFECTED OR ALL ROUND TEMPERANCE.

Another aid towards the storage of life is that stocial virtue which may be summed up in the term perfected, or all around temperance. I do not include in this term what is commonly understood, abstinence merely from stimulating or alcoholic drinks. Such abstinence is more than half the battle, but it is far from all the battle. The storage of life is reduced by intemperance of speech, of action, and even of thought. We may consider that whatever quickens the action of the heart beyond its natural bounds is a form of intemperance. In our present imperfect mode of existence, the heart is fitted in each individual according largely to his heredity, to do a certain amount of work, to beat a certain number of beats, for distributing daily a certain number of foot-tons of blood over the body, and then of finishing its course or career. It is probable that in the work thus carried out nothing is ever recalled. So much done, so much lost. The heart may wear out in its own structure by changes of disease going on there, and that adds to the evil, but I deal now with this ever-working organ in its natural state, as dying out simply by its own work, and it is by so studying it that the difficulties now being considered come into view. Stimulation of various kinds, hastening the decline of power, thus comes into operation and the organ fails under it. Our good and useful friend, the postman, feels it from the excess of his work on foot; the doctor or nurse feels it when obliged to forfeit the natural time of sleep; the man in the money market feels it when, for that which is not bread, he lets his excitement of sale or purchase carry his heart away into wild hope or wilder despair; the man of unbridled passion, who grows pale or red with rage, feels it up to the extremest tension, and is almost invariably cut short in his career, long before it is at its natural fulfilment, by this fact of cardiac wear alone. Beyond all these the jealous man feels it and literally corrodes into broken heart long before the proper period for which he was constructed, for of all moral excitements jealousy is the most fatal. It constitutes a distinctive disease.

These are stimulations excited by and through the mind; but to them we must of course add others of grosser quality springing from the improper use of foods and drinks. Here, in regard to foods, there lies before us a wide field for research, for up to the present time there has been very little discovered that can be trusted as proved. That our various tissues are constructed from the foods we take, every school boy and girl is now taught; but what foods are best fitted for the special tissues and parts the most advanced physiologist is not able to say with any of that precision of knowledge which is so urgently required. For instance: there is one tissue of our bodies that is of first and greatest moment. I mean the elastic, rubber-like tissue which gives elasticity to the lungs, to the arteries throughout all their course, and to some of the important membranous surfaces. If in the lung structure this elastic tissue fails, a large share of the expiratory function of the lung fails, and Dr. Francis Troup, of Edinburgh, in a splendid paper communicated to the *Edinburgh Medical Journal*, on the detection of pulmonary consumption by the microscope, has lately told us that the presence of the curly filaments of this tissue in the fluid expectorated by the patient is one of the earliest evidences of disintegration of the pulmonary organs. We all see the effects of the degeneration of this elastic structure in the differences of youth and age. We speak of the elasticity of youth, the rigidity of age. We speak figuratively it will be said. No! we speak actually; for we are merely describing differences dependent purely on the conditition of this veritable elastic tissue. The knowledge as far as it goes is good. We know the qualities of this tissue; I have myself vulcanized it as caoutchouc is vulcanized; we know its chemical composition; we know that it must originally be derived from food; but where and how it is constructed in the body, why it is so largely supplied and is so active in quality in the young body, so deficient and inactive in the old, we have no clear ideas whatever. We do not know what foods feed this tissue, what diminish it. We do not even know the elementary facts whether it is made at all after birth or whether we are born, so to speak, with a store of it, which is left to wear out an is never recuperated. On all this matter of feeding, therefore, we have, as sanitarians, much to learn, and in this direction of learning we have as a primary duty to determine the most primitive of all questions, whether it is wise to to use up as food the half-used-up tissues of the lower animals, or whether we should go direct to the vegetable world for our supplies and never swerve from that source.

Turning to the drinks which are necessary for perfecting the storage of life, I could say a great deal and shall say little. It would not be becoming of one whose views are so well known as mine to belabor you here with any long observations on the subject of temperance in regard to those fluids which by some wretched adventure of poor humanity in its puerile stage crept into use in some sections of the world as drinks exciting and vinous. But I must say that we may congratulate ourselves that their use has never extended beyond the human family, and that if the fish of the sea had discovered them the theory of Van Leeuwenhoek had never, even to his fertile mind, had any foundation. We may congratulate ourselves also as a human family that, except under the most degraded conditions, we are born abstainers from them, and live for our first few years protected from their action. Regarding this action and its influence on the storage of life I should be carrying complacency into the range of cowardice did I not add further that from the beginning to the end of the chapter the influence of alcohol on all the mechanism of the body that demands most care is towards deterioration and cessation of action, and this so determinately that a race could be produced under its baneful influence in which an artificial natural state—it is no paradox—should bring about a fixed lower limit of storage of life, a limit that should not represent, as its standard of duration, one-fourth of that which is now well known as the comparatively easily attainable duration.

PREVENTION OF DAMAGING DISEASES.

The existence amongst men of certain diseases which lead to physical damage and deterioration and to the reduction of the capacity for the storage of life, is the last subject to which there is time to refer. Putting aside diseases which kill so often right off the reel, but which may not leave any very serious damage in instances in which there is recovery from them, there are some which in the most conspicuous manner prevent the possibility of complete storage not alone in one but through many generations. The alcoholic diseases, the scrofulas and phthisical, the malignant or cancerous, the syphilitic, are, prominently, diseases of this order; and whoever in the sanitary line of research helps to remove them by getting at and removing their causes is amongst the truest friends of humanity that humanity ever possessed.

BENJAMIN WARD RICHARDS.

IN MEMORIAM.

ALEXANDER BROWN MOTT.

BY JOHN W. SHRADY, M.D.

Alexander Brown Mott, who was born in New York City, 25 Park Place, March, 31, 1826, was the fourth son and fifth child of Dr. Valentine Mott and Louisa Dunmore Munn. His grandfather, Dr. Henry Mott, a native of Hempstead, L. I , and descended from Adam Mott, was born in 1757; he was a pupil of Dr. Samuel Bard, and a New York practitioner for many years, dying at the age of eighty-three. Valentine, an elder brother, and also a physician of rising reputation, died from yellow fever in the prime of life. Dr. Valentine Seaman, so well known in our local annals, was also a remote relative of the family, all of whom belonged to the Society of Friends, or as they are generally known, Quakers.

Following up the Doctor's career in chronological order, his first preceptor was William Darling, then a tutor in his father's family, afterwards the erudite Professor of Anatomy in the University Medical College. Next came the thorough course of the Columbia College Grammar School, of which Professor Charles Anthon was the Rector. This brought him up to 1836, when during the European sojourn of his family until 1841, he enjoyed the privileges of the best masters. On his return to his native city, a desire to adopt the military profession turned his attention to West Point, which project, however, was abandoned after a short course of instruction under Lieut. Wayne, who was connected with that famous institution.

During the Autumn of 1842 the subject of this sketch again went abroad, passed nearly a year upon the Continent, principally in Germany and France, in the meantime accepting a position of trust in the Naval Agency, Marseilles. In the Summer of 1844 he accompanied Commodore Morris, U.S.N., in command of the Mediterranean Squadron, as his private secretary. Becoming identified with one of the Spanish revolutions, he found himself in command of a battery, and as a plucky leader at the siege of Barcelona, which surrendered after a three days' engagement, he was obliged to flee the country. Penniless, he worked his passage to Marseilles, where he formed a business connection which enabled him to visit Piedmont, Austria and Italy, all during the year 1845.

Most of 1846 he spent in Havre, France, in the study of medicine under the direction of a friend, using what time might be spared from mercantile pursuits, but not until the future doctor's return to New York in 1847, was there any real systematic effort—not before a formal entrance into his father's office and matriculation at the University Medical College. He afterwards took the course of the Vermont

Academy of Medicine in Castleton, where he was graduated in 1850. He immediately began to practice in New York, but at the same time he continued his studies, attending lectures in the New York Medical College. This institution granted him a diploma in 1851, he being one of the thirteen who constituted the first class of graduates. From being a busy aid to his father in his multifarious duties he gradually developed many philanthropic plans of his own, for even while yet a student he is credited with helping to organize the St. Vincent's Hospital, of which he was for a long time one of the attending surgeons. At the founding of the "Jews," now "Mt. Sinai" Hospital, he was appointed Senior Attending Surgeon and so continued until 1863, when he resigned. In 1859 he was appointed Attending Surgeon to Bellevue Hospital, and was somewhat later quite active in the organization of the college which has reflected so much lustre upon the institution which suggested its name. As its Professor of Surgical Anatomy he did most excellent work, and gradually improved himself in extemporaneous discourse, but never to the extent of overburdening his words with rhetoric at the expense of clearness or exactness of statement. He was terse and emphatic, but never ornamental.

In April, 1861, when President Lincoln made his first call for troops, Dr. Mott, as surgeon to the Second Brigade, N. Y. State Militia, received orders, and after two hours' notice was ready to go to Washington with his command. His sense of responsibility compelled him to weed out the druggists and mechanics who filled the position of regimental surgeons and assistants. Well qualified physicians, equipped with the proper appliances and instructed in the duties of their new rank, at his instance filled the vacancies. When on the eve of departure, however, he received a countermanding order, appointing him Medical Director *pro tem.* He was next ordered to inspect recruits, and is credited with laboring night and day, until 38 New York Regiments were sent to the field. Of those inspected he rejected twenty per cent. Those whose memories fail to recall this war epoch of the nation's history, can but feebly appreciate the magnitude of this great work.

Dr Mott persevered in his humanitarian work, becoming Medical Director in New York, and founding, with the help of a number of well-known women, the United States Army General Hospital in New York. He was made surgeon in charge of this hospital, and received on November 7, 1862, the commission of Surgeon of United States Volunteers, with the rank of Major. This grade, equivalent to that of the regular army grade, carried with it plenary administrative powers as regards hospital supervision and eligibility for appointments as Medical Directors, while it was understood to excuse from regimental duties in the field. About the end of 1864 he became Medical Inspector of the Department of Virginia, and was attached to General Edward O. C. Ord's staff. He was present at the memorable conference at Appomattox C. H. on April 9, 1865, when the terms of General Lee's surrender were arranged, and, with the brevet rank of colonel, was mustered out of service on July 27, 1865. He then resumed practice in New York.

Dr. Mott helped to found Bellevue Hospital Medical College. He was Professor of Surgical Anatomy there from its opening until 1872, after which he became Professor of Clinical and Operative Surgery. He performed many important operations, ligated most of the arteries, and, independently of his career of useful activity, his contributions to the advancement of medical science were such as will hand his name down to posterity.

In 1851, April 3, he married Miss Arabella, the youngest daughter of Thaddeus Phelps, by whom he had a son and a daughter, the latter dying at an early age. Dr. Mott's domestic life was an unusually happy one while his wife lived. After her death in Rome, 1874, he gave his whole attention to his profession and to the affairs of the many societies of which he was a member. He held a prominent place in the Century Club, and was President, of the Mott Memorial Library, at No. 64 Madison Avenue, and of the American Pasteur Institute. He was also a member of the County Medical Association and was connected with all the important medical societies in the country. He belonged to the Protestant Episcopal Church, and took a great interest in Masonry, being Sovereign Grand Inspector-General of the Supreme Council (Cerneau rite) and Puissant Lieutenant-Commander thereof for the United States and Territories. He held under that body the thirty-third and last degree in the A. and A. Scottish Rite, was Most Illustrious Sovereign Grand Master-General 33°, 90°, 96°, of the A. and P. Rite and the Rite of Memphis. He was also Junior Vice-Commander of the Rice Post, G.A.R., a Companion of the Loyal Legion, (N. Y. Commandery,) a member of Holland Lodge, No. 8, F. and A. M., a Companion of Jerusalem Chapter, No. 8, R. A.M., and a Knight of St. John of Malta; also a Past Commander of the Adelphic Commandery, No. 59, of Knights Templar (Mounted).

Dr. Mott died Sunday morning, August 11, 1889, at his country seat in Yonkers, of pneumonia, after a two days' illness.

Few men in the profession were better known and appreciated than Alexander B. Mott; few had more sterling qualities or manly virtues—certainly none exceeded him in modesty or courtesy—always approachable and yet dignified, he impressed with a sense of latent power. " Born to the purple " and happily exempt from the necessities which beset the opening career of the aspirant after medical honors, he never presumed upon his advantages or cared to win any prize without honest competition. Nay more, he suffered somewhat in consequence of being overshadowed by his father's renown, and yet he was great in his own right—no one disparaged his achievements more than himself, and certainly no one toiled more conscientiously or did better work. As a thorough anatomist and a neat, elegant operator, he won a reputation whose lustre is not likely soon to be dimmed. Many possess, but none have deserved, a wider fame than he.

MISCELLANEOUS.

THE clinical significance of the presence of albumen in the urine is a subject which has recently reappeared in our pages, and its great importance, as well as its great difficulty, more than justify all the attention that has been bestowed upon it. There can be no doubt that, without prejudging questions which are still *sub judice*, some real change has taken place in professional opinion upon the subject. A decade or two ago, if the question had been put, " What is the significance of the persistent presence of albumen in the urine, and what is the prognosis in such cases?" but one answer would have been forthcoming, viz., that such cases were instances of organic disease of the kidneys, and that the most probable outlook was death within two years. This answer can no longer be given with safety. That it would be true of a very large number, possibly the vast majority, of such cases is very probable; but we have come to recognize that there are exceptions, and that it is our business to determine how these may be recognized with reasonable certainty. In fact, albuminuria, which was long regarded as absolutely diagnostic of grave disease, is now recognized as only a symptom—usually a most serious symptom, but nevertheless, one that does not exclude the necessity of further inquiry, or relieve us from the obligation of doing our utmost to interpret it correctly. As has been well said, we may compare albuminuria with hæmoptysis. If a patient spits blood frequently, there is a very high probability that he has tubercle in his lungs; but it is a question of probability, not of certainty, and in exceptional cases even frequent blood spitting is not followed by any evidence of tubercular mischief. So with albuminuria. Its presence most strongly suggests the existence of organic renal disease; but we have to abandon the attitude of dogmatism with regard to this symptom, and admit that it may coexist with perfect health.

Dr. Pavy has well emphasized the cardinal distinction, without regard to which all discussion of this question must be dangerously misleading. The distinction is this—that it is only in cases in which albuminuria has existed for some considerable time, *without the development of any other symptom whatsoever*, that we are justified in seriously entertaining the idea that its presence may be free from grave danger. If any other symptom usually associated with Bright's disease—such as vertigo, dyspnœa, anæmia, persistent dyspepsia, high tension in the arteries, serous inflammations, or retinal changes—co-exists with albuminuria, the case at once passes out of the category of mere functional disorder, and becomes of the gravest character. It is obvious, therefore, that in dealing with a case of albuminuria our first duty is to exhaust all our methods of diagnosis in order to determine whether any of the symptoms enumerated above are present, even very slightly, and not to rest satisfied until the fact of their absence is assuredly determined. Nothing can be more vexatious or injurious to the practitioner than to diagnose a case of albuminuria as one of the rare exceptions, when the development in a few days of some symptom shows to demonstration that, on the contrary, it comes under the very common rule.

It seems to us that rather too much has been made of those cases of albuminuria appearing under forced and unnatural conditions in health. Extreme physical fatigue, intense mental excitement, and some other causes, have been shown to be capable of producing temporary albuminuria, and this fact has been much relied upon, by those who advocate what may be regarded as the newer views upon the subject.

It is doubtful, however, if we are justified in drawing any definite conclusions from symptoms appearing under conditions entirely without analogy to those usually prevailing. A person ascends an Alpine peak, and has an attack of hæmoptysis. This only proves, what no one ever doubted, that a sudden and extreme alteration in the conditions of blood-pressure may cause hæmorrhage, but it helps us little if at all, to determine when hæmoptysis occurring under normal conditions, is due to organic disease and when it is independent of such. A parallel reasoning may possibly apply to those cases of albuminuria occurring under peculiar and highly abnormal conditions. The fact is interesting and worthy of careful note, but we must be very chary of reasoning confidently from it.

The abstruseness of the subject is shown by the fact that even the presence of casts, so long relied upon as absolutely diagnostic of organic disease, does not justify any final conclusion. Their presence is very noteworthy. If they are numerous and constant, the probability of Bright's disease becomes almost a certainty. Their character is capable of affording important guidance. But the remarks already made upon albumen apply almost without alteration to casts—viz., that while their presence is highly significant, we must note that presence as only a most important element in our diagnosis, and not as conclusively determining the whole question.

Cyclic albuminuria, or cases in which albumen appears in considerable quantities at intervals, the urine being free from it in the interim, has attracted much attention since it was first described by Dr. Pavy. It would appear, as might almost have been conjectured, that such cases are somewhat favorable relatively, and perhaps approach nearest to meriting the designation of "functional." This term reminds us how much this question has been one of nomenclature. Whether "physiological" albuminuria is a justifiable expression, has been hotly debated, and it has been argued with much force that we might as well talk of physiological epistaxis or physiological hæmoptysis because bleeding from the throat and lungs may occur under abnormal conditions in health. The correctness of the analogy may be contested, but probably Dr. Gairdner is right in preferring the expression "functional" albuminuria. This, we presume, involves no hypothesis beyond the assumption that albuminuria occurs apart from discernible organic disease, and that this occurrence must be due to some aberration of function. These assumptions are hardly any longer contested.

We may sum up the present state of medical opinion on this most difficult question by saying that the persistent presence of albumen in the urine is a most grave symptom, and in the great majority of cases is indicative of organic renal disease; that, nevertheless, this rule has some rare exceptions; that we are only very slowly seeing our way to the detection of these exceptions, but that we may best hope to avoid error by invariably taking a comprehensive view of each case, by allowing each symptom its due weight and avoiding the drawing of conclusions from one symptom only, by postponing any important decision until time may have helped to the clearing up of difficulties, and by deriving all the help we can from considerations of history and etiology.—*Lancet.*

FOREIGN BODY IN THE TONSIL (J. Herbert Claiborne, Jr., M.D.) —A young woman consulted me with the complaint that her throat had been sore for a number of weeks. There was something on the right side that "stuck her" whenever she swallowed. Examination by the mirror revealed the existence on both sides of chronic hypertrophic tonsillitis. On the right side projecting from one of the central crypts was a white pointed spicula. It had the appearance of a hard tonsillar concretion. The breath was very offensive. I endeavored to remove the thing by a probe, but found that it could not be dug out with a probe. It seemed to be deeply imbedded in the tissues. The tonsil bled profusely from the manipulation. A pair of dressing forceps were too rough to catch hold of the projection. I finally caught a firm hold with a pair of conjunctival forceps, but they slipped off when traction was made.

The patient complaining of great pain, a little of a four per cent. solution of cocaine was applied to the part by a cotton-armed probe. She immediately became frightened and hysterical from the sense of constriction in the throat caused by the cocaine. Confidence having at last been restored by suasion another attempt was made to remove it with the conjunctival forceps. This time I was successful, but the projection came away with some difficulty.

The foreign body was about half an inch in length, of the size of a darning-needle; was sharp at both ends, and was covered throughout by a heavy secretion. By its appearance and feel I concluded it must be either a piece of finger-nail or a bristle from a tooth-brush. The patient strenuously denied the habit of biting her finger-nails, but cheerfully admitted that she cleaned her teeth.

The foreign body having been thoroughly traced with needles, a stain of methylene blue was applied. Microscopic examination showed that the substance was composed of flat epithelial scales with large, round nuclei. I concluded it was animal in origin, and stated to the patient it was my opinion that it was a piece of finger-nail. She was never seen afterward.

The Nature of Light-percipient Organs and of Light Perception and Color Perception (Charles Stedman Bull, M.D.).—Gunn ("Roy. Lon. Ophth. Hosp. Rep.," xii., 2) draws the following conclusions from the main facts regarding light-percipient organs: 1. All light-percipient cells are modifications of epithelial cells, or developed from the same embryonic layer which forms them. 2. The ends of these cells corresponding to the cuticle have generally cuticular structures formed in the shape of rods. 3. The opposite ends of these cells are either directly continued as nerve-fibers, or are connected with ganglion cells, and ultimately with nerve-fibers. 4. Pigment is practically always present, either in the light-percipient cells or in close connection with them. Exceptions exist where a tapetum is present and in the rare albino individuals having eyes of high types; but then non-pigmented cells always exist, which are evidently capable of performing similar functions to those of the pigmented cells, though in a minor degree. 5. All forms of vegetable and animal protoplasm sensitive to light are acted on by the shorter waves corresponding to the violet end of the spectrum, and the same holds good in a marked degree in the case of all those light-percipient cells as yet known to act to light. 6. The property of *phototaxis* is universally influential in the manner in which these cells arrange themselves and in the direction in which they contract on exposure. When the cell is free, this effect exhibits itself in free phototactic motion, while in the case of attached retinal cells it shows itself in contraction toward the incident light. 7. The pigment cells have the property of secreting chemical fluids according to their exposure to light and shade, and the pigment contained in them is doubtless of service as being light-absorbent, and thus aiding a rapid transformation of light energy into protoplasmic action. 8. The result of the action of the secretion of the pigment cells on the segments of the light-percipient cells may be demonstrated by the electrical current produced. 9. The strength of this current depends upon two factors—viz., (*a*) The activity developed in the pigment cell under the action of light, and (*b*) the depth to which the cone is imbedded in it. 10. In the case of vertebrates this resultant current is greatest on exposure to yellow light. 11. Differences in the action thus produced, and consequently in the nerve-current transmitted to the visual center, are associated in our minds with sensations of differences in color. 12. In regard to the stationary rods, the action induced will probably depend upon the amount of destruction of retinal purple, and the consequent demand upon the pigment cell. As this action is known to depend more on intensity of wave-height than on wave-length, it is improbable that the rods have any higher function than that of transmitting impressions which will be appreciated in our conscious centers as variations in light intensity. 13. The function of the retinal purple is probably mainly to protect the the pigment epithelium from too great exposure, and thus to modify its secretion and its action on the end organs imbedded in it. If the peripheral area of the retina were not defended in this manner, strong lateral illumination would have an unnecessarily great and confusing effect. The retinal purple is constantly being regenerated in the living retina during exposure to *diffused* light.

CONCOMITANT CONVERGENT STRABISMUS.—Lang and Barrett (*ibid.*) draw the following conclusions from their investigations upon this subject: All evidence tends to show that in cases of concomitant convergent strabismus treatment is of value chiefly for cosmetic purposes. There is no definite evidence to show that valuable improvement in the vision of the amblyopic eye ever takes place under any circumstances. Good vision in the squinting eye is retained usually in cases of strabismus in which the disease appears later in life than usual—*i. e.*, after five years of age. Many of the cases which begin late in life are cases of alterating strabismus in which excellent vision exists in each eye. In a fair number of these cases of late origin the extinction of vision by nebulæ seems to cause the strabismus to appear. In the great majority of cases of concomitant strabismus (excluding alternating cases) the amblyopia is irremediable. Correction with glasess, prolonged monocular use of the amblyopic eye, cure of the squint, and even the re-establishment of binocular vision, all fail to produce any valuable improvement in vision. It is only at a very early period of life that the amblyopia is capable of being produced; we should regard the amblyopia as being due not to a deterioration of vision but to a failure of development. It is probable that in these amblyopic cases there is failure to educate the visual sense at the only time in life when the education is possible—viz., when the sense in the other eye is being acquired. A minority of cases of amblyopia are probably congenital in origin, and the amblyopia in these cases probably determines the development of the strabismus. It seems that the existence of hypermetropia is almost essential for the development of squint; and astigmatism or irregularities of refraction frequently exist in the squinting eye. These latter conditions are found so early in life that the explanation of their presence on the ground of arrested development from disuse must be rejected, and we must believe that in many cases they are casually related to the strabismus. After the enumeration of every possible cause, however, there remains something which cannot be explained—a "further something" which determines the presence of strabismus in one case, and the absence of which negatives the presence of the strabismus in an exactly similar case in all other respects. That this something is transmissible seems probable from the records of our cases.

SALPINGO-OÖPHORITIS AND ITS RELATIONS TO EXUDATES WITHIN THE ABDOMEN.—Many points have been elucidated respecting circum-uterine inflammations since surgeons began boldly to make investigations by means of laparotomy. These investigations have shown that those diseases known under the name of parametritis were due to disease of the tubes and ovaries; they have also verified the assertion Aran and of Bernutz, that pelvic peritonitis is a late phenomenon of tubal and ovarian disease, but a most important one from a clinical stand-point. From the foregoing it has followed that the so-called phlegmon of the broad ligament is no longer recognized, or at least only very rarely. Hence the theories concerning phlegmon and adeno-phlegmon of the broad ligament should be abandoned as causes of error in the interpretation of certain symptoms. In pelvic or circum-uterine inflammations an indurated mass is frequently found near the pubic arch and in the region of the broad ligament, extending, perhaps, near to the umbilicus. This may be followed by fluctuation, which will be the guide for opening a deeply seated abscess. It has heretofore been considered by many as the extension of a phlegmonous inflammation beginning at the base of the broad ligament, developing within its layers, and penetrating to its upper portion. From the latter point it was supposed that it infiltrated the tissue between the peritonæum and the pelvis, stripping up the peritonæum and forming a mass between the Fallopian tube and the abdominal wall. Laparotomies have demonstrated the error of such views as the foregoing, and have shown the cause of the abdominal exudate, and also its practical importance. The tubes and ovaries do not always occupy the same position in the pelvis when this exudate exists, and they may be found at a great distance from their normal situation. Usually they are in the *cul-de-sac* of Douglas, massed at the side of the uterus; but sometimes they are fixed by firm adhesions behind the symphysis pubis, at their proper level. They may also be displaced upward, perhaps coming in immediate contact with the abdominal wall. If they are much enlarged while in the latter position they may be mistaken for an abdominal exudate. The tumor in such cases may become as large as the fist, including not only tubes and ovaries, but also omentum and masses of thickened false membrane, all firmly adherent to each other.—A. F. C., *Annals of Gynæcology*.

THE CONGRESS OF GERMAN PHYSICIANS.—On June 24th the seventeenth Congress of German Physicians met at Brunswick and passed the following resolutions: "(*a*) 1. Every kind of public laudation, whether it proceeds from the physician in question himself or from others, and continued advertising in public papers, is to be reprobated. 2. The designation 'specialist,' for puffing purposes, is to be reprobated. 3. The public offering of medical assistance gratis, underbidding in concluding contracts with sick societies and the like, offering advantages of any kind to a third person, in order to procure practice, are inadmissible. The designations 'Klinik' and 'Poliklinik' (hospital) belong exclusively to institutions which serve the purposes of instruction in connection with universities. 4. The ordering and recommending of secret remedies are inadmissible. 5. Any attempt of any kind on the part of a physician to intrude upon the practice of another is dishonorable, especially in the case of one who has acted as substitute or in consultation. A practitioner must by no means undertake the treatment of the case without the express assent of the previous physician. A specialist called in for a definite part of the treatment must strictly confine himself to that. 6. No physician is at liberty to make disparaging remarks to others about another physician. (*b*) For the enforcement of these rules, courts of honor (or the like) are to be established everywhere, with whom the power of breaking off the professional connection rests as an effective measure against those physicians for whom warnings do not suffice." As regards the position of the physician as an expert witness in courts of law, which has been the subject of many conflicts between judges and physicians, the Congress passed the following resolutions: "1. If a physician be summoned to act as an expert witness in a court of law, and if questions be put to him which he can answer only as an expert, he has to ask the Court whether it be not advisable to swear him as an expert. 2. If the Court refuse to do so, and if the physician be nevertheless compelled to give his opinion as an expert, he shall complain to the competent authority. 3. If a physician be called upon to give his opinion as an expert, on the basis of statements which the physician who treated the case in question, has made as an expert witness, he must conscientiously ask himself whether he is able to give a pertinent opinion on the basis of these statements; and if his conscience tell him that he cannot, he must make the giving of his opinion dependent on co-operation with the physician who treated the case, and who must be called as an expert witness. 4. The supreme legal authorities shall be requested urgently to recommend the courts always, even when one of the parties objects, to appoint the physician who has treated the case, as, if not the sole expert, yet one of the experts in conjunction with other physicians, in cases in which the said physician has been examined as an expert witness, and an expert medical opinion is to be heard on the basis of his statements." The Congress further resolved to express its opinion that drunkenness should be recognized as a reason for placing a person under trustees; also that the obligatory period of medical study, including the term of military service, should be fixed at not less than five years.

NORMAL AND HYPNOTIC SLEEP THE RESULTS OF INHIBITION OF MENTAL ACTIVITY.—In previous researches, Brown-Séquard (*Arch. de Phys. Norm. et Pathol.*, Nos. 1, 2, 1889) has demonstrated that hypnotic sleep was the result of an inhibitory effect, and that, in organic or traumatic lesions of the encephalon, the temporary loss of consciousness is due to the same intellectual inhibition. The following reasoning is given for attributing normal sleep to an inhibitory effect: Durham and Hammond's theory that sleep is dependent upon vascular contraction taking place in the cerebral lobes cannot be accepted, since rabbits and guinea-pigs, after section of both great sympathetics of the neck, sleep the same as if they had normal cerebral circulation. The same results are obtained from experiments on cats and dogs after extirpation of the superior cervical ganglia on one side, and section of the vago-sympathetic on the other. This opposes directly the theory of vaso-contraction during sleep, for, whether there is intense hyperæmia or anæmia, sleep is not interfered with. That the loss of consciousness during sleep, as well as during numerous other accidental or pathological conditions, is due to inhibition of the cerebral faculties is confirmed by the facts that (1) loss of consciousness from puncture of the medulla and similar conditions is decidedly due to an inhibitory act; (2) with regard to what is known of the conditions that precede or accompany sleep, it suffices to conclude that, as in any inhibition, at the onset and during sleep there exist irritations in the organism at a distance from the organ subjected to loss of activity. The following details confirm the existence of irritations: *a*, The so-called need of sleep is characterized by certain sensations, and particularly by a sense of heaviness in the eyes; *b*, persistent constriction of the pupils; *c*, contraction of the orbicularis palpebrarum; *d*, contractions of the rectus internus and superior; *e*, contraction of the blood-vessels of the retina and cerebral lobes. Aside from inhibition of the psychical faculties, there is inhibition of certain muscles, and perhaps some cardiac and respiratory inhibition. These different inhibitory acts during cessation of intellectual activity imply the existence of irritation somewhere or at different points.

The induction of sleep in man by compressing the carotid and cervical vago-sympathetic (Fleming and Augustus Waller) proves that sleep is apt to be induced by peripheral irritation. To this may be added the fact of the somnolent influence of certain gastric irritations. As regards the location of the irritation inducing sleep, it is not correct to suppose its existence in the brain, for pigeons sleep and awake periodically after as well as before ablation of the cerebrum. The reflex contractions and paralytic irritations associated with sleep, if considered as originating from the same point, are to be located in the excitable parts of the cerebral base rather than in the cerebral lobes. (The author has often witnessed the hyperæmic condition of the base of the brain, and especially of the medulla and spinal cord, during sleep.)

As an argument additional to these statements, it is alleged that in artificial epilepsy of guinea-pigs, it is possible to induce loss of consciousness and cessation of convulsions by peripheral irritation; loss of cerebral activity may take place, too, by inhibition through the influence of irritation, even when very slight, especially if the seat is in Flourens' *nœud vital*.

There can be no doubt, after these statements, the author thinks, that there exist irritations at different points present during sleep, and beginning before sleep sets in. He is convinced that the facts are sufficiently conspicuous to lead to the belief that the principal phenomenon of ordinary sleep—*i. e.*, loss of consciousness—is the effect of an inhibitory act.

FEMALE STERILITY.—Dr. George Woodruff Johnston, of Washington City, concludes a paper in the *Maryland Med. Journal*, September 7th, with the following words: "From the observation of such cases of barrenness as I have encountered, I have learned especially two things. One of these is that every sterile woman should be examined with the utmost thoroughness; metaphorically speaking, from top to toe. Every effort should be exhausted to find out the most minute particular in which she differs from the normal subject, and all of these factors should be put down as are the factors in a mathematical equation. The negative elements are then to be eliminated; next the doubtful, until finally one or more important features remain; and it is to these, and not to a large number of pre-conceived and generally erroneous opinions, that we must address ourselves. Every case should be examined thoroughly and upon its own merits.

"The next fact is the advisability, nay, the absolute necessity, of never expressing any decided opinion as to whether pregnancy will or will not occur. If you are too hopeless, you may be startled by hearing that your patient, after a suitable lapse of time, has called upon some professional rival to deliver her of twins. If you are too sanguine, you may be doomed to see your own expectations, and the confidence of your patient in you, come tumbling down about your ears together."

VIRCHOW ON DARWIN.—Some sensation has been caused at the recent Anthropological Congress in Vienna by the speech of the great Berlin biologist, Virchow. About a year ago Virchow, on a similar occasion, made a severe attack on the Darwinian position, and this year he is similarly outspoken. We make the following extracts from his long address to the Congress:

"Twenty years ago, when we met at Innspruck, it was precisely the moment when the Darwinian theory had made its first victorious mark throughout the world. My friend Vogt at once rushed into the ranks of the champions of this doctrine. We have since in vain sought for the intermediate stages, which were supposed to connect man with the apes; the proto-man, the *pro-anthropos*, is not yet discovered. For anthropological science the *pro-anthropos* is not even a subject of discussion. The anthropologist may, perhaps, see him in a dream, but as soon as he awakes he cannot say that he has made any approach toward him. At that time, in Innspruck, the prospect was, apparently, that the course of descent from ape to man, would be reconstructed all at once; but now we cannot even prove the descent of the separate races from one another. At this moment we are able to say that among the peoples of antiquity no single one was any nearer to the apes than we are. At this moment I can affirm that there is not upon earth any absolutely unknown race of men. The least known of all are the peoples of the central mountainous districts of the Malay Peninsular, but, otherwise, we know the people of Terra del Fuega quite as well as the Eskimo, Bashkirs, Polynesians, and Lapps. Nay, we know more of many of these races than we do of certain European tribes; I need only mention the Albanians. Every living race is still human; no single one has yet been found that we can designate as Simian or quasi-Simian. Even when in certain ones phenomena appear which are characteristic of the apes—*e. g.*, the peculiar ape-like projections of the skull in certain races—still we cannot on that account alone say that these men are ape-like. As regards the Lake Dwellings, I have been able to submit to comparative examination nearly every single skull that has been found. The result has been that we have certainly met with opposite characteristics among various races; but of all these there is not one that lies outside of the boundaries of our present population. It can thus be positively demonstrated that in the course of 5,000 years no change of type worthy of mention has taken place. If you ask me whether the first man were white or black I can only say I don't know."

Virchow summed up the question as to what anthropological science during the last forty years has gained, and whether, as many contend, it has gone forward or backward. "Twenty years ago the leaders of our science asserted that they knew many things which, as a matter of fact they did not know. Nowadays we know what we know. I can only reckon up our account in so far as to say that we have made no debts; that is, we have made no loan from hypothesis; we are in no danger of seeing that which we know overturned in the course of the next moment. We have levelled the ground, so that the coming generation may make abundant use of the material at their disposition. As an attainable objective of the next twenty years, we must look to the anthropology of the European nationalities."—*London Tablet.*

MEDICAL NEWS AND NOTES.

HYDRO-THERAPEUTICS FOR DYSPEPSIA.—Dr. Chas. Kevin, in a paper read before the Ulster Medical Society, says he has tried about a dozen cases of painful dyspepsia with what is called the "hot pad" and "binder." It is made up of three parts—a pad (four-ply of swansdown) about twelve inches by six inches; a roller two yards long, half swansdown and the other half mackintosh cloth; and one and one-half yards of a flannel binder. The pad is put into boiling water and wrung out. It is then put over the abdomen at bed-time, covered with the cotton and waterproof binder, and over all the flannel binder is placed. In the morning all is removed, the abdomen is sponged with cold water and rubbed with a rough towel, the flannel binder is then put on and worn throughout the day. Where much pain is complained of, the whole apparatus may be worn constantly. He thinks the beneficial effects are due to the fact that more blood is brought to the parts requiring it, spasm is relieved, and support is given to the abdominal muscles. He finds in cases where he has ordered it that it relieves flatulency, pain, constipation and distension. It is also useful in insomnia, and cleans the tongue when it is coated. —*Dub. Jour. of Med. Sciences.*

FEMALE practitioners in Russia are forbidden to attend adults of the male sex.

DURING the last eighty years 8,000,000 people have died of phthisis in France.

DR. T. T. KIRK, of Pittsburg, Pa., was called to attend a patient with miscarriage. The fœtus was five months and ten days old. It gasped and cried when expelled, and on wrapping it in cotton and feeding it on sweetened water, lived twenty-two hours.

"SHOW me a man who rides a velocipede or bicycle, and I'll show you a case of spinal complaint," says Dr. Agnew.

DR. M. SANDRUZKY, director of the Children's Hospital of Jerusalem, states that he has successfully treated a boy who had had leprosy for two years. He also says that no one in that country believes in the contagiousness of this disease, and no case of contagion has been observed in that institution since 1867. There are about five hundred cases in Palestine.

THE Government of Germany has refused to allow any more medical colleges to be organized, as they have come to the conclusion that there are enough in that country.

THERE are upwards of 140 writers on the editorial staff of the *British Medical Journal.*

CAUSES OF UNFITNESS FOR MILITARY SERVICE.—According to an article in a Russian military medical journal, the number of young men liable to military service in the Kieff district who were rejected on medical grounds during the years 1883 to 1886 was more than 60 per cent. of those examined. The most foremost ground of rejection was myopia. This defect was especially common amongst Jews. The same remark applies to eruptions of the skin and of the scalp, which were also frequent causes of rejection. Another very frequent cause of rejection was hernia, and here again the Jews were found to be affected in this way more frequently than the Christians.

IN Austria there are only 218 homœopathists, out of the whole number of medical men, which is 7183; and only 44 of these profess to practice homœpathy exclusively—and the number also is said to be steadily decreasing.

ARTERIES FOR DRAINAGE-TUBES.—At a late meeting of the American Surgical Association, Dr. S. H. Weeks showed some specimens of a new variety of absorbable drainage-tubes he has prepared. They are made from the arteries of the ox. The vessels are separated from their sheaths and cut into appropriate lengths They are first boiled in water for five minutes, then passed over glass rods of proper size. Subsequently they are immersed for ten minutes in corrosive sublimate solution (1 per cent.), and finally stored in alcohol (95 per cent.). They are said to be entirely unirritating, to act as efficient drains, and to be absorbed in about a week.—*Lancet.*

IT is proposed to remove the headquarters of the Hay Fever Association from Bethlehem, N. H., because of the treatment received from the citizens of the place.

SENILE MICROBIO-MANIA.—The *Revue de Thérapeutic* says: A savant of Naples, Dr. Malinconico, has made a greater discovery than the famous elixir of youth of Brown-Séquard. The journals announce very seriously that Dr. Malinconico is about to discover the *microbe of old age.* This microbe is transmitted, according to the Italian savant, by inheritance, invades with age the entire human organism, ravages and destroys it, producing old age, and finally death. Dr. Malinconico hopes he will be able to discover the means to combat and finally to destroy this terrible microbe, which will prevent men from growing old. The savants are invaluable.—*Times and Register.*

DR. LUTZ, formerly assistant in Dr. Unna's clinic at Hamburg, has been invited to proceed to Honolulu by the Haiwaiian Government, and to remain there some time, to study leprosy and to investigate the new methods of treatment.

THE Sultan is much alarmed by his increasing obesity, and he has just summoned Dr. Schwenninger to Constantinople, from Berlin, for whose accommodation a palace on the Bosphorus at Therapia has been prepared, where he is to stay for a week. Dr. Schwenninger's treatment has immensely benefited Prince Bismarck; and the Czar was much the better for it; but he soon gave it up, as he is an inveterate gormandizer, and careful and very plain feeding were as impossible to him as the prescription of one tumbler of weak whiskey and Apollinaris at each meal, instead of the magnum of champagne which he usually consumes.

THE Iowa State Board of Health has decided that Iowa medical colleges after 1891 must give a four year's course, if they desire their graduates to be admitted to practice within the borders of the Commonwealth.

IT is stated that a Paris stationer has invented an ink warranted to fade off the paper in a week, without leaving the slightest trace. To say nothing of the advantages of such a discovery to fickle lovers and shifty politicians, the use of this convenient liquid may, perhaps, commend itself to practitioners who have strong opinions on the question of vested interests in prescriptions.

HOW TO CLEAN HYPODERMIC SYRINGES.—Syringes, whose canals have become obstructed so that a fine wire cannot be drawn through, are cleaned by holding them for a moment over a flame; the foreign substance is thus quickly destroyed and driven off. If a wire has been rusted in the needle it should be dipped in oil before holding over the flame. To remove the rust from the interior of the canula it is well to pass oil through the canula, then heating it; then rinse it out with alcohol. The needle is then ready for use.—*Deutsch Med. Wochenschr*, 1889.

THE Prussian Minister of Education is turning his attention towards the study of the history of medicine, which seems to have been slowly dying out. There used to be a chair for this subject at every German universtity but they all have become vacant with the exception of the one at Berlin, occupied by Professor Hirsch, the Nestor of the historians of medicine. To counteract this it has been ordained that every newly appointed professor of hygiene should give lectures on the history of medicine as part of his work.

A REPORTER of the *Pittsburgh Dispatch* "does up" an amputation for the delectation of his readers, and explains the great care taken "to keep small insects out of the wounds."

"After the leg was severed from the body," says the scribe, "the stump was scraped very carefully; the chloride of mercury was kept flowing constantly over the wound to kill any insects that might be drawn by the wound. The doctors hold that the air is full of poisonous germs, which are attracted to a wound where blood flows. All the linens and gauze which are used in operations are soaked for twenty-four hours in bichloride from 100 to 500 per cent. in strength. This is done to prevent the slightest irritation after the operation has been performed!"—*Boston Med. and Surg. Journal.*

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Jacobsen, Professor of Chemistry in the University of Rostock, at the age of forty-nine. Dr. Anthon Geuther, Extraordinary Professor of Chemistry in the University of Jena. Dr. Anton Nuhn, Honorary Professor of Anatomy in the University of Heidelberg, whose name is connected with the glands discovered by him in 1845 in the apex of the tongue. Professor Nuhn was seventy-four years of age, and was, with the exception of Professor Hyrtl of Vienna, the oldest German anatomist. Dr. Joseph Tieftrunk, of Prague, formerly body physician to the Emperor of Austria. Dr. Franz Hellwig, the botanist attached to the German New Guinea expedition. Dr. Wasseige, Professor of Midwifery in the University of Liège.

BALSAM OF PERU AS AN ANTISEPTIC.—The successful results obtained by Landerer with balsam of Peru in the treatment of tubercular affections have induced Brautigam and Nowak to investigate the antibacillar action of this substance. In view of its numerous adulterations, it is important to obtain it in a pure state. The results are as follows: 1. Pure Peru balsam is capable of destroying micro-organisms within twenty-four hours. 2. In emulsion of twenty per cent, it has no specific action on the growth of cholera, anthrax, or pus bacillus. 3. The favorable results from the Peru balsam treatment are probably due to its destructive action on ptomaines.—*Wiener Medizinische Presse.*

THE American Academy of Medicine is endeavoring to make as complete a list as possible of the Alumni of Literary Colleges, in the United States and Canada, who have received the degree of M.D. All recipients of both degrees, literary and medical, are requested to forward their names, at once, to Dr. R. J. Dunglison, Secretary, 814 N. 16th Street, Philadelphia, Pa.

DR. S. WEIR MITCHELL, of Philadelphia, has been elected President of the Congress of American Physicians and Surgeons which meets in Washington in September, 1891.

DR. A. R. ROBINSON, of New York, has been appointed by the committee on organization of the International Congress of Dermatology and Syphilography, to be held in Paris, to open the discussion on the subject of "lichen."

SUCCESSFUL PROSECUTION OF QUACKS.—The Medical Defence Union are to be congratulated on the success of their latest attempt to put down adventurers who trade upon the weakness of a certain portion of the public. They have brought six summonses against three unqualified practitioners of the "notorious advertising venerealist type" in Birmingham. One of them was C. F. Groom, who, at the instance of the Union, was struck off the rolls of the College of Surgeons last year. The summonses was taken under the 40th section of the Medical Act for the illegal assumption of a medical title. It is gratifying to learn that the full penalty was inflicted in all the cases, amounting to £124, 14s. 6d. This, we are informed, is only the first stage, as the Defence Union intend to bring exactly similar actions in the County Court, under the Apothecaries Act.—*London Lancet.*

This example could be followed in this country with much benefit, both to the patient and practitioner, if we only had proper laws properly enforced.

EDITORIALS.

PHYSICAL TRAINING.—The Annual Report of the Board of Health of Maine contains a paper by Dr. F. N. Whittier, director of the Sargent gymnasium at Bowdoin College, on "Light Gymnastics for Schools."

Dr. Whittier repeats the argument for systematic physical training in public schools.

He bases his paper on some experiments made by him on a number of dull students. Their records previous to physical training was noted, and then a steady record of their attainments was kept during the gymnastic course and for six months afterward. Their average rank during the period previous to the training, was forty-five per cent. This was increased to seventy-four per cent. during the gymnastics. The latter percentage obtained for six months after the training was discontinued.

These observations lead us to a train of thought that we are only too willing to pursue. We hold it to be a fact, supported by evidence religious and scientific, that God gave man his body before he blew the breath of life into his nostrils.

Our physical structure is the basis of the superstructures of mind and soul.

In normality the beauty and perfection of the latter two depend upon the solidity and health of the first. The sound mind in a sound body has been sought after and taught since time immemorial as the *summum bonum*, the greatest good that can be wished for by men. In the march of those congeners, sin and diseases through the world, normality has become mediocrity and abnormality, has become the motive power, the force of creation—genius. The sound mind in the sound body logically, would seem to militate against the birth of genius, for it is only when excessive force is exhibited in one direction that great things are conceived or done.

When the father of the Stoics founded his philosophy he recognized the immutable law of compensation, and preferred to preserve equilibrium of mind and body rather than to shift constantly between high and low, this way and that. In equilibrium of any kind active energy is saved and stored up as potentiality, and the equivalent of inertia is established.

But it is not inertia or equilibrium that has set the world a going or keeps it in motion; it is rather the overcoming of these things, the failure of equilibrium, the cessation of inertia, which induces every movement that takes place in the world. And yet, a middle course is the best, is fraught by the greatest comfort, peace and satisfaction. Are we, then, right in cultivating this increasing tendency in the age to progress in one direction? Ought we not rather to direct our energies over a wider field, and trust to the ages to develop piecemeal what we endeavor to do by a *coup de main?*

In olden times there was a greater number of men in the world with sound minds in sound bodies, and the world of knowledge stood still, too, till equilibrium was destroyed, till men thought rather than fought, and pondered rather than wondered.

It is useless to attribute the change to education. Thought and education have apparently gone hand in hand, and it is quite as impossible to establish the priority of either as it is to settle the question of precedence between the egg and the hen.

Those colleges that cultivate the physical man *in perfection* do so at the expense of the mental. When the sum of the vital force is equally shared by the body and the mind, mediocrity of both *need* not result. Both may be raised to a higher point. This is distinctly the tendency of the age.

But there is usually a preponderance of mind over matter, or matter over mind. Athletes are rarely brilliant scholars, and brilliant scholars are rarely athletes. In the Middle Ages, when the physical man was cultivated beyond the mental, there were geniuses, but their power lay almost always in the direction of a usage of brute force, or in the recital of deeds of brute strength; and many that exhibited the supremacy of mind over matter were physically imperfect. Alexander was wry-necked. Homer was blind. Attila and Pepin, dwarfs with enormous heads. Demosthenes was crooked as to his shoulder, and was a stammerer. Æsop was a hunchback. Byron was club-footed. Apollo was gifted with beauty, but not with the cunning of Mercury.

Still the maintenance of a race of people depends rather on their physical than on their mental strength. Luxury and ease have progressed *pari passu* with the growth of civilization and education. The golden age of literature in Rome stands unpleasantly near the decadence of the stern and soldierly qualities of the old Romans. Despite their art, their refinement, the cultivation of the intellect, the tawny-haired Germans, with their stout arms and unbending backs, bore down the cultured sons of "lofty rampired Rome." Look at the past as we may, we see as a fact that brute force conquers in the end preserves the vitality of a race and keeps its foundations firm.

We are willing to believe that all things are progressing toward their proper termination. The doctrine that "what is, is right," is hard to overthrow. A sound mind in a sound body, with the whole crowned by the coronet of toleration and higher education is the ideal condition for man.

In this ideal condition the incentive to sin will be gone, and fear, which is born only of a consciousness of law broken, will fade away as it were the memory of an awful dream. Conscience will be but the recollection of things that are rightfully done, death will be robbed of its sting, the grave of its victory.

A man clothed in the garments of physiological and spiritual spotlessness can stand unmoved amid the wreck of worlds and the crash of spheres *si fractus illabitur orbis Impavidum ferient ruinæ*, or, "when his summons comes to join the innumerable caravan, which moves to that mysterious realm," he can "wrap the drapery of his couch about him and lie down to pleasant dreams."

This Utopia is being built day by day by the divinely directed trilogy, education of the mind and body, medicine, religion.

COFFEE; EFFECTS OF ITS INTEMPERATE USE.—It is a general belief among the people at large that in coffee we have a delightful and refreshing drink, entirely free from any noxious effects. While it is true that used with wise moderation it produces no bad results, yet it has been ascertained that its immoderate enjoyment, long continued, induces a long train of morbid symptoms. A very interesting and instructive paper from the pen of Dr. Mendel has lately appeared in the *Berliner Klinische Wochenscrift*, entitled, "The Injurious Consequences of the Chronic Abuse of Coffee," which is well worthy of careful study. From the investigations of this writer it appears that the immoderate use of coffee, continued for some time, evokes a characteristic morbid condition, with a definite group of symptoms. The subjects of his studies were the working women employed in factories in a portion of Germany. These women are accustomed to drink coffee from early morning until late in the evening; while the men drink gin, they drink coffee. In this country it may not be used so freely as in Germany, but still it is not to be denied that it is often consumed immoderately. In order to understand the deleterious consequences of the abuse of coffee it is indispensable to ascertain the pharmacodynamic effect of *coffein* in *small* doses as well as in *those* producing symptoms of acute poisoning, the *coffein* being the actual constituent in question. The effects of the poison are threefold. In the *first place* the *central nervous system* is so altered in its function that the reflex excitability experiences a more or less high degree of exaltation according to the doses exhibited, while, on the other hand, the reflex inhibiting centres are disturbed in their action.

Secondly. In small toxic doses the muscles are rendered capable of going over more easily from the relaxed to the contracted condition In large doses this condition is made a permanent one, and a change is called forth in them which has the greatest similarity with *rigor caloris* or *rigor mortis* (Schmiedeberg).

Thirdly. The heart experiences an increase in the frequency of its pulsations, its activity becomes irregular, arythmical. The blood-pressure sinks, especially in excessive doses, the consequence of which is a contraction of the arterial vessels and an engorgement of the venous vessels. It occasions an increased demand on the working capacity of the organs, and this naturally must have, as a consequence, a correspondingly increased waste, the former assumption of the power of coffee to cause a diminution of the disintegration of albumen being no longer tenable. In correspondence with these toxic effects of the alkaloid, we may divide the train of symptoms evoked in the human body by the chronic misuse of coffee into three groups—into such as may be referred to disturbances in the *central nervous system*, into such as may be regarded as the consequence of *changes in the muscles*, and finally into those symptoms which are due to perverted action of the heart and changed circulatory conditions. A frequent subject of complaint on the part of those who suffer from chronic *coffeinismus* is a general feeling of weakness, disgust for work and depression of spirits, all which phenomena are due to the effect produced on the central nervous system by the alkaloid contained in the coffee. The central nervous system, in consequence of the too frequent and too intense stimulus of the coffein, falls into a state of weakness and lack of energy, which can be removed only by constantly increasing toxic doses, and this only temporarily. The condition of the patient is that of *neurasthenia.* From the powerful influence exerted on the muscles by coffein, it is not to be wondered at that a characteristic symptom of the disease under discussion is a *lowering of the motory force of the muscles.* These patients also complain of *trembling* of the hands as well at rest as in movement. After chronic abuse of coffee the pulse becomes small, accelerated, irregular, the heart impulse weak. The patients often suffer from a feeling of anxiety which they localize in the region of the heart, and palpitation of the heart, especially after mental excitement or corporeal exertion. In consequence of the lowered activity of the heart, these patients suffer with cold hands and feet. The color of the face is yellowish-white, and the mucous membranes are anæmic and pale. The intemperate use of coffee is often the cause of a *venous plethora* of the abdomen, inasmuch as it produces a contraction of the arterial vessels, and consequently an engorgement of the venous circulation. Consequently, hæmorrhoidal affections are by no means rare under these conditions. The obstinate constipation from which these patients suffer is referable to the abdominal plethora. Other symptoms easily explicable are *loss of appetite*, *nervous dyspepsia* and *cardialgia.* The *causal indication* demands as the prime factor of cure a complete abstinence from the use of coffee. On the other hand, the body must be supplied with an abundance of nutritive material, and rest must be enjoined. It is all important that the popular notions regarding coffee should be corrected, and the people be taught that it is not capable of imparting strength to the organism, that it is simply a *stimulant*, that it does not supply any nutritive material to the body, but gives rise to an increased consumption of albumen, and that used immoderately may seriously jeopardize the health.

In the October number of the *North American Review* may be found an article entitled, "The Open Door of Quackery," by Dr. William G. Eggleston, of Chicago, Dr. Austin Flint, Professor of Physiology, and Dr. R. Ogden Doremus, Professor of Chemistry in Bellevue Hospital Medical College. Says Dr. Eggleston: "So far as I have been able to discover by extensive investigation, this country (the United States) is the only one in which a fraudulent Medical College has ever existed; the only country in which the National Government exercises no control whatever over medical education—a matter of the most vital importance to the public; the only one in which several sections of the country have medical laws all of which are different; the only one in which the signatures of a few stock-holding professors in a Medical College entitle the holder of a diploma to practice medicine; the only one in which the educational requirements for admission to and graduation from *legally incorporated* Medical Colleges vary from *nil* to very high; and the only country on earth in which the *extinct* Medical Colleges almost equal the number of extant ones—105 of the former and 117 of the latter, exclusive of preparatory schools." His remedy for these evils he so properly deprecates is to place the whole matter in the hands of the Federal Government, to insure uniformity of regulations.

We agree with Dr. Flint in the opinion he expresses, that this remedy is impossible, or we would rather say, it is inexpedient. It is not at all desirable for the general Government to intervene here. Each State must, and we believe will, sooner or later, by suitable legislation, correct the evils in question. With Dr. Flint, we believe that if the State of New York were to pass an Act regulating the subject of the practice of medicine, so framed as to accomplish the ends we have in view, other States would follow her example, and ultimately such a degree of uniformity of law would be found in all the States of the Union as would be entirely satisfactory. We do not agree with this eminent author and teacher in the suggestion he makes (in the Act he outlines as a suitable one), that in the constitution of a Board of Examiners, appointed by the Regents of the University of the State of New York, half the number should be teachers in the unsectarian Medical Colleges of the State. The members of such a Board should be absolutely free from any connection with any one of the colleges, so that they may be without bias or prejudice. Dr. Doremus insists that such an elimination of professors from the Examining Board will not raise the standard of medical instruction. "How many eminent medical practitioners who are not teachers," he remarks, "could thoroughly examine graduates of colleges in anatomy, materia medica, physiology, chemistry, physics, pathology and bacteriology? * * * The educated students would know more than their examiners." Dr. Doremus is apparently under the impression that every medical man, as soon as he has obtained his diploma and entered upon the active practice of his profession, begins at once to forget all that he has learned and makes no effort to keep pace with the progress of knowledge. With the majority this is, alas! but too true; but with the true scholar it is different. He considers the knowledge he has acquired during his collegiate or university career as simply the foundation on which he must build in after years. To such a man it would be a comparatively easy task to refresh his memory upon any one of the subjects regarding which it would fall to his lot to examine applicants. As a matter of fact it is not at all proven that the professors themselves keep abreast of the scientific knowledge of the day. Some do; many do not. It would be a slander upon the medical profession of this State if it were maintained that there were not many scholars in its ranks who did not sit in professorial chairs. There is another statement of Dr. Flint which we feel called upon to criticise, as it is liable to mislead. Dr. Flint states correctly that the University of Virginia will graduate students of medicine after only nine months of study. This is true, but it should be added that the standard of graduation in that institution of learning is so high that very few students succeed in obtaining a diploma after one year's study. Many men would fail to get the degree of M.D. in the University of Virginia if they studied there ten years. After all it is not the *time* that a young man has been nominally studying medicine that is all-important, but what he *knows*.

A "DOG'S EXISTENCE" has not the reputation of being a happy one; and yet, if they knew how much good they do when sacrificed at the altar of experimental surgery they would doubtless prefer an honorable death to a questionable life. Whether they do or not, their life is a great uncertainty if Dr. Senn, of Milwaukee, can lay his hands on them. His experiments on dogs was the foundation for one of the best papers that has been written in this country for a number of years, although there are unquestionably a number of serious objections to the wholesale insufflation of hydrogen (or any other) gas to determine the question of a perforating wound of the intestines, and we are not inclined to regard the result as "infallible."

The next rôle played by our quadruped friends under Dr. Senn's directions was to demonstrate the feasibility of the relief of complete intestinal obstruction by means of a lateral anastomosis with decalcified bone plates. This has opened up possibilities of a prolongation of life to a class of patients to whom nothing was thought possible, indeed, nothing desirable except to die, and the sooner the better. Various modifications and substitutions have been offered for the bone plates, the most important being the catgut rings proposed by Dr. Abbe, of this city. But the fact remains that a most useful means for the relief of sufferers heretofore considered beyond the pale of surgery, has, by Dr. Senn's clever and earnest experiments, been offered this class of patients.

The trilogy is completed by a paper which has just reached us, entitled, "On the Healing of Aseptic Bone Cavities by Implantation of Antiseptic Decalcified Bones." Here, too, the dogs have played a principal part in furnishing material for the demonstration and practical application of the idea. The method of Neuber, by which the healing of a wound (in bones) was hastened without an attempt at the reproduction of the tissues (whether destroyed by disease or by the operation), by turning in the soft parts and covering the denuded bone; that arising from Listers's demonstration of the fact that "under the antiseptic dressings in aseptic wounds coagular between the surfaces of the wound did not undergo putrefactive or degenerative changes, but, as he believed, and asserted, became supplied with blood-vessels and were organized," the method of making use of the blood-clot for the healing of the bone cavity; that of T. B. Hamilton, which substitutes a sponge for the aseptic blood-clot; and, finally, Schede's method of putting an Esmarch on the proximal side, operating on the bone closing the soft parts (leaving a space at the summit of the cavity) and then removing the constrictor and allowing the cavity to fill with blood, are all mentioned, and their merits discussed. He then offers his own ingenious method in which he uses decalcified bone. To express it in a few words, it is simply filling the cavity, after it has been rendered aseptic, with thin plates or discs of bone, and then follows the "removal of the implanted decalcified bone by the granulation tissue which forms all around it, and thus a large mass of embryonal tissue is interposed, ... a condition which is favorable to the formation of new bone at the site of the operation." The experimenter also claims that the implantation "prevents (in injuries to the skull) direct union between the pericranium and the brain or its envelopes." If this be true, and the writer's record of experiments seems to demonstrate it satisfactorily, we may hope to avoid in extensive compound comminuted (depressed and undepressed) fractures of the skull where there is loss of bone, that very troublesome complication of hernia cerebri. Dr. Senn admits the superiority of Macewen's re-implantation of the bone itself where this is possible; but with the extension of the possibilities of defeating the protrusion of the brain substance, where there has been much loss of bone, by using decalcified bone, we may hope to almost remove this serious and often fatal complication. If more of our profession would resort to the practical demonstrations of their ideas before they flood the literature of the profession with impracticable and often harmful propositions, the cause of science would be advanced and the safety of our patients enhanced. We welcome each effort of Dr. Senn and congratulate him on his industry and activity. His latest proposition deserves a speedy trial and we hope some of our readers will—even at the expense of a "yallow dog"—try the method experimentally so that they can, if they find it satisfactory, put it into execution when the occasion arises.

THE *N. Y. Herald* of October 17th contains an account of an outbreak of a "Fever," presumably typhoid, at West Albany, N. Y., a village on the suburbs of Albany, at which the shops of the New York Central R. R. are located. The disease has been confined almost entirely to the employees of the rail-road shops, of which there are about 1,200. Of these, 400—thirty-three and one-third per cent.—contracted it in the course of a few weeks, with a mortality of forty—ten per cent. The cause is thought to be due to imperfect sewage and the contamination of a well from which a great many of the workingmen procured their drinking water. Of course, newspaper reports, when pertaining to medical matters, must be taken *cum grano salis*, but even though the sanitary arrangements are much better than as depicted by the *Herald*, they are still certainly in a shocking condition, and must be deleterious to the health of people living in the neighborhood. Those in authority have a great responsibility resting upon them, and ought to be made to use, at least, reasonable sanitary precautions.

THE HEALTH CONGRESS ADJOURNS.—The American Public Health Association adjourned yesterday in Brooklyn, to meet next year at Charleston, not earlier than November 1. A resolution that the Governments of the United States and Canada be urged to co-operate with each other in the preparation of the next census was adopted. These officers were elected: President, Dr. Henry B. Baker of Michigan; First Vice-President, Dr. Frederick Montizambert of the Province of Quebec; Secretary, Dr. Irving A. Watson of New Hampshire; Treasurer, Dr. J. Berrien Lindsley of Tennessee.

Dr. William M. Smith, Health Officer of the Quarantine Station said during the discussion of a paper on infant mortality that statisticians had estimated that the death-rate among infants in the tenement districts of New York city was smaller than in the more fashionable districts. This is, of course, another sad commentary upon the unreliability of statistics.

THE article on Microbic Life in Sewer Air, published in the October issue of this JOURNAL appeared as an original article in that very valuable and interesting periodical, the Sanitarian.

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ORIGINAL ARTICLES.

ARTICLE I.

A FURTHER CONTRIBUTION TO THE STUDY OF THE ÆTIOLOGY AND PROPHYLAXIS OF PUERPERAL SEPTIC INFECTION.*

By GEO. T. HARRISON, M. A., M.D., of New York, N. Y., Honorary Fellow of the Society.

When I had the pleasure of attending the session of this Society in 1885, it was my privilege to read a paper before you on the *Ætiology*

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* Read before Virginia State Medical Society, September 5, 1889, at Roanoke.

and Prophylaxis of Puerperal Septicæmia. Since that time this interesting and all-important theme has been discussed by many learned bodies—notably, by this Society in 1886, by the British Medical Association in 1887, by the New York State Medical Association last year, and more recently by the German Gynæcological Society. In the medical journals also numerous contributions have enriched the subject, in this time, not to mention special brochures.

The result of these discussions has served to show that many deficiencies in our knowledge still exist, and that opposite methods of treatment in the management of labor and the puerperal state are the necessary consequence of divergence of views respecting its ætiology. As Bokelmaun expresses it, in his valuable paper read before the Berlin Society of Obstetrics and Gynæcology on the 24th of May last,* "the recently appeared doctrine of auto-infection, the industrious researches of the bacteriologists, and the practical consequences deduced from them respectively, have divided the obstetricians into two camps which stand opposed irreconcilably to each other. The one side attaches all importance to the disinfection of the obstetrician (Mermann's subjective antisepsis). The other considers it a matter of necessity to subject the parturient woman in a greater or less degree to antiseptic measures (Objective antisepsis)."

The ground I occupied in the paper just referred to, was that the infection always takes place from without—never from within. The causes are always external and not internal. If a puerperal wound were protected from external influences, it would heal like a wound on the surface of the body similarly protected—*per primam intentionem.* And, again, I maintained that an *autogenous* or *autochthonous* infection, of which we hear so much, and to which it is so convenient to appeal when perturbed by the reproaches of conscience, is an impossible thing. It is time now to discard the term as misleading and tending to induce wrong methods of treatment. I further insisted, in speaking of prophylactic measures, that in a normal condition of the pregnant woman no vaginal injections should be administered *before or during* birth. Moreover, that antiseptic vaginal douches *immediately after the birth* and *during the puerperal state*, in cases of normal labor, are likewise uncalled for and useless. On the other hand, great emphasis was laid on the thorough disinfection of the hands of the obstetrician, and all instruments and clothing likely to be brought in contact with the parturient woman. In a word, I took the position of those who advocate the paramount importance of what Mermann calls *subjective antisepsis*.

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* Vide *Berliner Klinische Wochenscrift*, No. 26, 1889.

Of course this position does not exclude the necessity of the thorough cleansing and disinfection of the external genitals. About that we are all agreed.

Those who uphold the doctrine of auto-infection, as a necessary consequence of their views, lay the chief emphasis on *objective disinfection* of the parturient woman. Thus one of its ablest defenders (Kaltenbach)[*] says, "A large part of the cases of death on account of *metrophlebitis* and *pyæmia* might have been avoided if the mode were generally appreciated in which an obstetrician, even with a clean hand can induce infectious forms of disease. Only by the prophylaxis of auto-infection is it possible for our system of obstetricial antisepsis to attain to a complete conclusion, and, also, those sporadic forms of disease be avoided, against which the most thorough external disinfection avails nothing." Consequently, he insists, that as the surgeon disinfects his field of operation so must the obstetrician disinfect the parturient canal as well as its nearest vicinity, in the very beginning of birth, before each operative intervention.

As the result of his careful bacteriological studies, Winter[†] arrives at the following conclusions: "After all, I am inclined to believe that in the healthy woman, the conditions for auto-infection are found in consequence of the existence of pathogenic germs in the genital canal. Therefore, the demand must be made for an antisepsis of the parturient woman. In addition to a general bath and cleansing of the external genitals, this must consist in a disinfection of the genital canal. Provisionally I would subscribe to the demand expressed by Ahlfeld and repeated by Kaltenbach, of a preliminary vaginal douche in the beginning of birth. It suffices no more, however, according to the result of bacterial investigation, to disinfect the vagina, but the cervix must be likewise treated." Steffeck,[‡] in his article on disinfection of the female genital canal, draws the practical inference from his experiments that a rational disinfection of the cervix and vagina for obstetricial purposes is indicated.

Dœderlein,[§] as the result of his bacteriological investigations, believes that there is a possibility of pathogenic micro-organisms attaining to the uterus from the vagina without direct conveyance by the examining finger, in view of the fact that germs are constantly present in the vagina, and hence that auto-infection is possible. He believes, therefore, that the disinfection of the obstetricial canal is indicated. In association with Gönther he made a series of experiments upon the best means of disinfecting the cervix and vagina, and finds in creolin an antiseptic which is not obnoxious to the objection of obstructing the secretion of mucus and producing cauterization.

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[*] Samml. Klin, Vorträg, Volkmann, No. 295.

[†] *Zeitschrift f. Geburtshüefe u. Gynækologic*, Bd. XIV.

[‡] *Zeitschrift f. Geburts u. Gynæk.* Bd XV, Hft. 2.

[§] *Archiv f. Gynæk.* Bd XXXI.

If these demands made by the bacteriologists just quoted should be generally acceded to, and it should become an universally accepted rule of practice that the cervix and vagina of every parturient woman should be subjected to a thorough and energetic disinfection, I am convinced that an immense amount of injury would be inflicted.

In the *first* place, this disinfection procedure involves the necessity of depriving the parturient canal, from vulva to the os internum, of its physiological mucus which subserves the purpose of a protecting coat. The *mucosa* is made thereby more vulnerable from the want of its mucus as well as by reason of the manipulations. Small epithelial wounds are hardly to be avoided in the use of these measures and, as a consequence, the entire mucus membrane is prepared for the invasion of infective germs. Moreover, the course of birth is mechanically retarded by this loss of the vaginal mucus—one of the physiological functions of this mucus being to diminish friction and facilitate the passage of the child's head through the canal invested by it. Every obstetrician, of modern times, must have been struck by the harsh, dry, rigid feel of the vagina after being douched with a mercuric chloride or carbolic acid solution as contrasted with the moist, yielding, slippery condition of the normal mucous membrane; and hence, it is easily intelligible that the use of antiseptics in the vagina must often exercise an unfavorable course on the second stage of labor.

Again, the disinfection of vagina and cervix, if thoroughly done, is quite a painful procedure and must evoke in hyperæsthetic individuals a high degree of psychical excitement. Another disadvantage pertaining to the doctrine of auto-infection and its practical consequences, is that, as Bokelmaun well states, "it diminishes naturally the personal responsibility for the welfare of his patient, which every obstetrician should have, and the wholesome dread disappears of the possibility of infection, which ought to accompany every one who examines a parturient woman internally." Whatever may happen there is always an excuse at hand. "And what is the sense," one of the advocates of this doctrine may say, "of troubling myself about cleaning and disinfecting my hands with disagreeable antiseptic fluids, if the vagina is already filled with infective micro-organisms."

In these circumstances let us see if the ground we occupied is not still tenable in the light of modern bacteriological knowledge and clinical experience. And here let me remark that it is a matter of congratulation that one of the most excellent bacteriologists, Bumm, has come to our aid recently and illumined this whole subject by his exact and masterly exposition. He insists, for a proper understanding of puerperal traumatic diseases, upon the necessity of distinguishing between *septic infection*, produced by the penetration of definite pathogenic germs into the living tissues, and *putrid intoxication* produced by the reception into the blood of chemical substances. For the latter Duncan has proposed the name *sapræmia.*

Uncomplicated cases of puerperal sapræmia are by no means rare. Retained portions of the placenta that have undergone putrefactive decomposition, decomposing placental polypi, disintegrating myomata, dead and putrefying fruits, furnish examples of *putrid intoxication.* The poisonous matters of decomposing animal substances (ptomaines) are taken up into the blood-vessels and call forth chill, fever and diarrhœa. With each additional supply of putrid matters to the blood, there is an increase of fever. They do not multiply in the blood but the fever is maintained by the addition of new poison. As soon as the uterus is properly cleared of its contents the fever declines. It is just cases of this kind which are generally cited in proof of the doctrine of auto-infection. They are, however, not entitled to be called cases of *infection* at all, but simply cases of *ptomaine intoxication.*

Bumm considers it a problem well worthy of solution to determine with more exactness the micro-organisms which introduce decomposition in the puerperal state, and by their activity furnish the poisonous products of the decomposition of albuminoid bodies. He has ascertained that the products of decomposition need not have an especially striking putrid odor.

Several problems here suggest themselves. May putrid intoxication lead to septic infection? If so, is it because the decomposed lochia form a better nutritive soil for the traumatic infective germs than normal?—or are they able to facilitate the deposition of these germs, and make provision, so to speak, for their transference into the uterus? May the chemical poisoning of the tissues deprive them of their faculty of resistance and prepare them for the invasion of pathogenic germs which are found in the genital tract in a non-virulent form?

In *septic infection* we are concerned with micro-organisms which make their way actively into the living tissues, injure them by their growth, and by their general dissemination throughout the body produce such chemical changes and disturbances of normal functions that death ultimately ensues. They are discriminated from the bacteria of decomposition by their invasive properties, the latter not attacking living tissue, and only becoming noxious when they find the dead matter as a nutritive soil, which is absolutely necessary for the unfolding of their deleterious activity.

The micro-organisms which cause the infectious form of puerperal fever are almost exclusively *streptococci*. Bumm believes that no essential difference exists between the streptococci of erysipelas and of *phlegmonous inflammations*—in this respect differing from the views advocated by Gusserow. As the result of his investigations, which embraced a large number of healthy, diseased and pregnant women, he could confirm the conditions found by Gönner, according to which streptococci do not occur in the healthy genital secretion. "I must, therefore," he remarks, "with him declare that the occurrence of a streptococci infection through so-called auto-infection by the normal genital secretion is not possible; and included here are all severe and the great majority of the mild forms of puerperal fever." From the bacteriological standpoint he concludes that the ground is impregnable which assumes that the healthy parturient woman may be regarded *à priori* as aseptic. The success of obstetrical antisepsis depends on washing from the wounded genital tract virulent traumatic infected germs. These germs come from without.

To prevent their access to the wounded surfaces it is only necessary to carry out thorough subjective antisepsis and to disinfect the external genitals. The germs found in the vagina are comparatively innocent; they lack the power of invading the living tissue; they can never produce *septic infection*; they may at the most excite putrefactive decomposition. Such processes of decomposition which they evoke in the lochia in the vagina and cervix are devoid of significance.

Nor can it be asserted that clinical facts lend any countenance to the practical inferences which the advocates of the theory of auto-infection draw from their premises. Dœderlein and Gönther, who disinfected thoroughly and systematically cervix and vagina, could only show seventy per cent. of their puerperal women free from fever. Leopold's statistics seem to me to be demonstrative. As his material he had at his disposal 5,500 cases. When cervix and vagina were subjected to thorough disinfecting procedures he found that there was a marked rise in the morbidity. When the use of vaginal douches was interdicted, the *puerperium* ran a more favorable course. Of 510 women thus treated, only nine showed slight febrile phenomena. The best results were obtained when no internal examination took place.

It is important, too, to bear in mind that it is a very difficult matter to meet the demands made upon our therapeutical endeavors by the exigencies of the auto-infection doctrine. In order to do this, it is absolutely essential, not only in operations, but in normal cases of labor, to free the genital canal from germs and maintain it in this germ-free condition. According to the careful investigations which Bumm made in association with Nieberding, it was found that an actual and long-lasting disinfection of the genital canal under normal conditions was a very complicated affair, to say nothing of pathological.

In conclusion, let me urge you to a careful study of these questions, whose importance cannot be over-stated. Above all, let us set our faces sternly against any retrograde movement, tending to imperil our present attainments; and such a movement, in my estimation, is the theory of auto-infection, with its practical deductions.

ARTICLE II.

Open Treatment of the Abdominal Cavity.

By B. E. Hadra, M.D.,

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Abdominal surgery, notwithstanding its immense progress, does not as yet give even a moderate degree of satisfaction in acute diffuse septic peritonitis. Chronic infectious processes such as tuberculosis, actinomycosis, and the recently described microbic peritonitis of as yet unknown origin, offer much better prospects for surgical interference. Moreover, connective tissue abscesses and other extra and intra peritoneal pus cavities admit satisfactory surgical action. In some instances of septic intra-peritoneal infection the plastic inflammation produces barriers against a general spread, as we know, and under exceptionally favorable circumstances a vigorous constitution may survive the pathogenic germ and its effects. But, as a rule, a fully developed diffuse septic peritonitis, as met in child-bed fever, or after perforation of the bowel, or after operative or accidental traumatism, must even to-day be considered more or less fatal with or without surgical interference. The aim now of this paper is to investigate the causes of such an unhappy condition of affairs, and to suggest means to meet it more successfully. I may say at once that I am going to advocate open treatment of the abdominal cavity, or, in other words, to keep the contents exposed until the danger is over.

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* Read before the Southern Surgical and Gynæcological Association at Nashville.

What are the physiological and pathological peculiarities of the peritoneal sac in comparison with other serous cavities?

There is, before all, a far greater power of resorption, and likewise of secretion or transsudation, in the former. And this is not only due to the larger area of surface, but also to the force under which the fluid contents are pressed into the lymphatic system by the respiratory movements of the diaphragm, and also by intestinal peristalsis. Such an arrangement must produce a very quick exchange and removal of the intra-peritoneal fluids. This is like draining a bottle which has the faculty of continually refilling itself; and if this bottle should be full of poison, it is easy to see how much greater the danger must be. Wegner, from his thorough experiments, states that in a rabbit eight per cent. of the body weight is resorbed in one hour. And further, the same author makes it more than plausible that the openings of the large and numerous lymph vessels on the abdominal surface of the diaphragm (discovered by Recklinghausen) perform a suction in consequence of the respiratory movements, which cause a most effective and direct connection of the intra-peritoneal fluids with the lymph current. Such a combined system of resorption makes us understand the rapidity of intoxication from which, not infrequently, the victim succumbs in a few hours.

But there is a second and equally important peculiarity of the peritoneal sac. It is that it is filled with bowels, which, by their peristaltic movements, carry poisonous material in a very short time from the point of infection all around, into every nook and corner, between the coils of the gut and in every fold of the membrane, and thus spread the disease over an immense area. It can only fail to produce a deadly disease when the septic fluid gravitates to Douglas' pouch or other dependent parts of the peritoneum, and by a happy combination of circumstances it becomes shut up there, either by plastic inflammation or by a coil of intestine or any other organ; or, if the poisonous material be of very small quantity; or, finally, if it be of relatively benign nature. Considering now that the peritoneum is also a transuding membrane, it is obvious that this, its action, will also be increased by any kind of irritation. This again produces a very favorable condition for the pathogenic germ, to which moisture means life, whilst dryness is death.

Another danger, depending upon the presence of bowels in the infected abdominal cavity, is their own septic condition. The walls easily become invaded by germs through the serosa, and, as a consequence, they become diseased and rendered unable to protect the intra-peritoneal cavity and their own contents from each other. Thus a new infection from the fæces is added. The impermeable partition in the healthy here becomes a medium of interchange between two sources of poisonous materials; the germs will travel through the walls in either direction.

In addition to these dangers, in most instances the bowels become distended, which phenomenon is not due only to a paralysis, and to the consequent accumulation of physiological gas, but is caused rather by functional destruction of the tissues of the walls, and by the new formation of pathological gases, in which process the pathogenic germ plays its rôle again. Now, the more the tympanites increases, the more pressure on the intestinal wall, and the more loss of vitality will follow. Besides, the distended convolutions will press upon each other, and upon all the other abdominal and the pectoral organs, and cause general systemic disturbances. And, finally, the pressure on the peritoneum will increase resorption of the poisonous fluids, though in extreme cases necrosis may result from it, and undo all functions of this membrane.

Summing up now the points making the diffuse septic peritonitis so dangerous, there are:

1. The extensive area of peritoneal surface, with its enormous power of resorption of the poisonous material.
2. The active secretion into the sac, and thereby furnishing cultivating fluids for the germs.
3. The ready absorption by the lymphatics of the diaphragm.
4. The general distribution of the poison by intestinal peristalsis.
5. The infection of the intestinal walls from without, and the additional infection of the peritoneal cavity by transsudation and immigration of germs from the inside of the bowels.
6. The distension of the bowels, increasing the pressure and the resorption.
7. The impeding effect of this latter condition upon respiration, defæcation and secretion of urine, leading to systemic poisoning by retained products of oxydation.
8. In perforative cases, the contamination by fæcal matter; in stab and shot-gun wounds, by other impurities, bile, urine, etc., and before all by contaminated blood.

What are the indications for treatment?

Besides supporting the patient's strength, relieving the suffering, caring for proper action of bowels, kidneys, etc.—in short, besides the general medical treatment, it is obvious, from the foregoing explanations, that the surgeon will have to provide for the following points:

1. To remove the obnoxious material—germs, fæcal matter, urine, etc.
2. To prevent its new formation, or a repetition of its entrance. The sac should be kept dry to deprive the germ of its soil; the breaks have to be mended, or the channels of contamination ought at least to lead to the outside.
3. To prevent the bowels from distributing the poison throughout the whole cavity.
4. To counteract pressure and suction, in order to prevent resorption of the poison.
5. To prevent mutual infection of the peritoneum and the bowel.
6. To relieve pressure, in order to avoid disintegration and paralysis of the different structures.
7. To free respiration, defæcation and urination when tympanites has developed.

Are the present methods satisfactory?

This question everybody must answer with an emphatic No! What are the boldest procedures yet followed? The abdomen has been opened and washed out; then either closed or drained by a single tube. A step forward, and, if I am correct, first advocated by our distinguished president, was to establish multiple drainage. Another way was to drain, and to attempt to maintain dryness by the use of bags of hydroscopic material in the cavity, exchanging them from time to time through a small incision. Still another method is suction through a drainage tube.

None of these approaches, in my humble opinion, even a moderate degree of efficacy. Even a constant irrigation by a powerful current would not suffice. It is only necessary to remind you of the difficulties after laparotomies to get rid of shreds and flecks of blood or detritus, and of larger particles of new growth from between the coils of the intestine, and from the folds of the peritoneum. Lawson Tait recommends to move the hand all over and between the intestines, whilst gallons of water are used to help to wash the foreign substances away. And now think of the innocent drainage tube through which you invite the obnoxious material to come away.

Nothing but the clearing of a limited surface or interspace, to which the tube reaches, will be accomplished, especially when the bowels are distended. And still, our aim should be not only to wash out, but also to keep dry. For this latter purpose the gauzebag and, perhaps, also the suction arrangement, will do some service; but certainly not beyond the nearest neighborhood.

In order to relieve the pressure, especially when tympanites has set in, puncturing, or in cases of laparotomy, incising the gut is taught. Evidently only transient benefit can be gained by such interference.

Nothing further is done to prevent the exchange of poisonous material between intestine and intra-peritoneal cavity. Nothing, also, is done to prevent the bowels, the peritoneum, and all the other abdominal organs from pressure on each other. Nothing, finally, is done to reduce the resorption by the peritoneum and by the diaphragmatic lymph-vessels.

Open treatment.

In thinking over all these shortcomings, it occurred to me that only open treatment will meet all the indications by which our action should be governed. I mean by that term a full exposure of the abdominal cavity, which should be maintained until the danger has passed by. As much of the omentum and of the bowels as find no ready room inside, should be left resting on the surface. In such a way the cavity would be sufficiently cleansed and kept dry; the bowels to a great extent excluded; the exchange of poisonous material diminished; bowels, peritoneum, and all the other involved organs relieved of pressure. But what seems to me to constitute the main benefit is that the resorption and suction by the peritoneal and the diaphragmatic lymph organs would at once be greatly counteracted. The syphon action, which it in reality is, will at once be interrupted, because it demands an air-tight space from which to suck. If the beneficial effect of a small opening in the abdomen may be explained in this way, how much greater must be the relief from a wide and permanent one? Besides, a small incision may be obstructed by distended gut, whilst by the advocated plan the closed cavity in a physical sense is really abolished.

From such considerations the treatment I suggest appears to be an improvement on the present methods. It would also, I should think, in fresh perforation of the intestine or in a great number of traumatic accidents to the abdominal organs, be made use of as a preventive step against contamination, hæmorrhage, etc. Where, for instance, the injuries are too extensive to admit repair at once, or where there is much soiling with foreign matter, or where shock or untoward general surroundings forbid a long-lasting or sufficiently aseptic operation, the open method may offer the best chances, leaving further interference to a later time.

What objections could be raised to open treatment?

It might be feared that atmospheric contact would prove injurious to organs intended by nature to be shut off from it. Fortunately, experiments on animals, which have been made by reliable men, prove to the contrary. The every day surgical experience teaches the same fact. The spray has gone, and air of average purity is in hundreds of cases admitted for hours without apparently doing the least injury. Prolapsed parts have been carried outside the body after accidents for hours and days without harm.

Equally well by surgical experience the deleterious influence of temperature is proven to be more or less a bugbear. Of course extreme low degrees will harm, but the usual average warmth of closed or—in Winter—heated rooms is nothing to be afraid of. That the bodily temperature sinks when the whole abdomen is opened is beyond doubt, but a great deal of the fall is due to the effect of chloroform or ether which may lower it as much as three and four degrees. (*Kappeler.*) In fact, any protracted operation on any part of the body offers under the same conditions the same picture of lowered vitality. In the further progress of the open abdominal treatment, safeguards can be easily taken to protect the organs from being chilled.

Now as regards shock, this unexplained condition of intense nervous prostration. It is a known fact that injuries of abdominal organs, especially of the intestine, are before all liable to be followed by it. Still, again surgical experience teaches that a good deal of careful handling can be tolerated. I may remind you of the rough treatment, the bowels have to stand in many cases of abdominal surgery. Here, also, the anæsthetic and the loss of blood and rapid sepsis account better for the shock following the operation, than the nervous paralysis, in many cases.

Next the irritation of the dressings over the internal abdominal organs may be dreaded. But, from my experience and experiments we possess in the gutta percha tissue a nearly ideal, non-irritative, air- and germ-tight material.

Another objection will perhaps be the probability of consequent omental and intestinal adhesions. Though such considerations, when life is at stake, cut a very small figure, still we may feel at rest, when we study Dembowsky's experiments, proving that only the presence of pathogenic germs or of foreign bodies causes adhesions. Thus we may avoid such untoward sequelæ. And, more than that, we will by doing away with the septic inflammation, prevent, rather than excite, adhesions.

Finally, the restitution of the abdominal walls may, after the abdomen has been kept open for a long time, be considered difficult. But there is no trouble about the peritoneum. It heals readily, as many a case shows where it becomes torn and lacerated. Closing the muscular walls is certainly no unsurmountable obstacle.

Experimental support of the proposed treatment.

Thus far I have only given theoretical deductions and speculations. Knowing, however, that more than this is necessary to urge on any practical man to believe in a new and seemingly bold procedure, I regret that I cannot produce any facts drawn from a performed operation on men. Since I began to work out my problem, only one chance presented itself to me to carry out my plan; but, unfortunately, being a case of full-fledged sepsis from an incarcerated hernia with complete gangrene of a loop of intestine, of the sac, the testicle and a large area of the parietal peritoneum, there was little show for any treatment. But nevertheless the simplicity and the nicety of keeping the disturbed bowels outside the widely-opened abdomen the ease with which everything could be kept clean, the perfect drainage, etc., impressed me and my assisting colleagues most favorably.

But to make good the deficiency of evidence on human patients, I made experiments on rabbits and dogs, with the assistance of Dr. Geo. Dock. The two uncomplicated operations—one on a rabbit, the other on a dog—where the abdomen was split from symphisis to the sternum, and where, under a very simple protection, everything was left to itself, did so exceedingly well that they offered all the proof necessary to satisfy me that such interference, *by itself*, is not a dangerous undertaking. All other considerations are met, I trust, by the foregoing theoretical deductions, and what is by far more important, by surgical experience. I know very well that peritonitis is not as easily established in animals as in men; but thinking how much more perfect the after-treatment must be in the latter; how much the human patient himself will aid the surgeon and nurse, whilst animals do all they can against a cure; I should think that the difference is more than compensated.

But here is the report of the two experiments:

Case I.—A female rabbit was operated on on the 12th of July in the pathological laboratory on the demonstrating table—of course, not under very aseptic surroundings. Instruments, hands and dressings were well disinfected; the animal roughly shaved on its abdomen and washed there with sublimate solution. Then the abdomen was opened throughout the whole linea alba. The prolapsed bowels, forming a mass larger than a fist, were kept outside and the lump they formed was covered with a piece of disinfected gutta percha tissue which was sewn directly to the skin all around. A padding of absorbent cotton and a roller bandage finished the dressing. After coming out of the narcosis the animal took up its usual ways, feeding and defecating regularly. When it was examined on the fifth day, there was a large hernial sac hanging out, but nearly all over covered by the peritoneum, whose two halves were approaching each other rapidly, so that at the seventh day the gap was closed. The skin crept up on the peritoneum and gradually the sac grew smaller and more and more covered by skin. Ten weeks after the operation there was no mark of the operation left except a diastasis of the recti muscles about one and a-half inches long and one-half inch wide. The animal was killed, and it was found that besides the partial failure of the recti to unite, a slight adhesion of the bowels to the peritoneum constituted the only anomaly.

Case II.—A dog was operated on in the same room and in the same manner, on the 23d of August. The history of this case is exactly the same as that of the rabbit. The most interesting feature was the enormous thickening of the peritoneum, gradually increasing with the length of exposure. The animal was killed three weeks after the operation, when the ventral hernia had still the size of a large orange. Here some intestinal loops were found adherent to the peritoneum.

The results of these two cases were so convincing to me that no further trials were made with uncomplicated laparotomies. More complicated experiments did not do well, the animals dying under the anæsthetic or from want of care. It is not necessary, however, to go into details about them.

Outlines of the proposed treatment.

I would advise to proceed in the following way: Opening the abdomen under known precautions as extensively as possible in the linea alba, taking the navel as the center of the incision, say four to six inches on each side will be not too much. The protruding bowels should be carefully placed on the skin, allowing them all the spare room their distended condition demands. Then the aseptic hand enters all folds and interspaces of the abdominal cavity, and whilst sterilized warm water is following it in great quantities, every nook and corner is freed of its contaminations. Patient then is laid on his or her sides alternately, so as to let the water flow off. The bowels outside ought, of course, to be flushed freely. After thebalance of the water has been sponged out by cotton or gauze, a large iodoformed plug of such material should be left in each lumbar cavity, perhaps also in Douglas' pouch. If the bowels be very much distended, they could be punctured or incised outside. After such a thorough cleansing a piece of gutta percha tissue is put over the abdomen so as to cover and to overlap the intestinal protrusion. Perhaps the tissue will be best fastened to the skin by collodion or traumaticin latterly, but on the most dependent places plugs of absorbent material should be interposed between tissue and skin, in order to absorb the discharges. Perhaps it will be more convenient to fasten two halves of tissue laterally and to have them overlap each other in the middle line, which would form a kind of a door, admitting working without removing every time the whole apparatus. A light flannel cover may then be put over the tissue, and finally a cradle should be placed over the abdomen, so as to keep the bedclothes from the latter. If necessary hot bottles or similar contrivances may be kept inside this cradle to raise the temperature. Also a Kelly's pad could be used permanently under the patient to protect the bed from fluids. I only wish that the closing apparatus could be worked from a distance, perhaps by a rubber tubing attachment. The dressings and washings, the removal of the iodoform tampon, etc., will have to be repeated as often as it seems necessary, at least once or twice in twenty-four hours. Of course additional treatment, such as care for the bowels, kidneys, and, before all, the administration of alcohol, which in the hands of the Germans at least does wonderfully well, should not be omitted.

As soon as the danger is considered over, and especially as soon as the bowels regain their normal calibre and retract by themselves, a piece of disinfected gutta percha tissue may be inserted between the abdominal contents and the parietes, and the lips of the latter's wound freshened, stitches inserted, and whilst they are knotted, the tissue gradually withdrawn, which will prevent the cavity from becoming soiled. I do not think that it is necessary to stitch the peritoneum separately, but that will depend upon the operator's individual judgment.

But it seems to me well to meet a doubt regarding the feasibility of a frequent intra-abdominal dressing without giving an anæsthetic every time, which, of course, would constitute a very grave objection to the proposed method. But recollecting how often after a performed abdominal operation the "toilette" is made whilst the patient is already more or less out of narcosis, and how little he suffers from it; I entertain very little fear from such an obstacle.

Somewhat different from the described procedures the *modus operandi* will have to be in cases of *preventive* open treatment. Here we will have to be much more strict in regard to asepsis, and perhaps only the injured or bleeding parts will have to be kept outside, retained there by aseptic or iodoformed bundles or tampons. Also frequent redressing will have to be avoided. The transparency of the gutta percha tissue will, perhaps, admit watching without removal of the cover.

P. S.—At the Nashville Meeting Dr. Jos. Price incidentally stated that Dr. Warner and perhaps also others had followed the proposed plan of open treatment, and done so with success. Regretting that the reports on these cases have escaped my attention they will certainly only strengthen my propositions.

ARTICLE III.

LAPAROTOMY FOR INTESTINAL OBSTRUCTION.*

BY CORNELIUS KOLLOCK, A. M., M. D., CHERAW, S. C.

Intestinal obstruction, once regarded as one of the great bugbears of the profession, may now be said to be shorn of much of its terrors, and to rank with other hitherto insurmountable difficulties that are every day being relieved by laparotomy. The danger of opening the peritoneal cavity, and thereby producing fatal peritonitis, has been a cherished dogma taught in the medical schools of all countries. It is not a little singular that medical men should so long have been wedded to this belief, when their experience should teach them that the peritoneum is as little liable, if not less liable, to take on inflammatory action than any other tissue of the body, and that when it does become inflamed, it is always symptomatic, and depends upon some pre-existing cause. Chomel, than whom there can be no more reliable authority in Pathology, said more than forty years ago that he had never seen a case of idiopathic peritonitis. While few in modern times, have been so bold as to dare gainsay the opinion of this learned Pathologist, yet many have been slow to adopt the idea, and still more slow to act upon it. Even after the intrepid McDowell came to the front, and, impelled by his robust moral courage, opened the peritoneal cavity with the view of removing cysts, there were still those in the profession, both in this country and in Europe, who were more disposed to condemn the operation than to extol McDowell for his brilliant surgical exploit. While this proved that the peritoneum can be divided with impunity, there was still many a doubting Thomas. Some of them were of strength and prominence in the profession, who could not divest their minds of the old idea that a wound of the peritoneum was necessarily fatal. McDowell's success gave quite an impetus to abdominal surgery, and many who had previously stood aloof came forward as advocates of laparotomy. But it had to move slowly and cautiously. Both in America and Europe it was condemned. The celebrated Dieffenbach said, as late as 1848, that "any man who would open the peritoneal cavity was no better than a murderer, and should be placed in the criminal dock and tried for his life." But in time a change came over the spirit of the dream of even the Nestor of Continental surgery, and Dieffenbach's views as regards abdominal surgery were so modified that a short time before his death he expressed the opinion that ovariotomy might be justified where there was good assurance that the cyst had not formed adhesions with the adjacent tissues. If he had lived longer it is probable that he would have been a successful ovariotomist, and a strenuous advocate of laparotomy.

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*Read before the Southern Surgical and Gynæcological Association, Nashville, Tenn., November 12, 1889.

While the history of ovariotomy for the past twenty or thirty years has established the fact that the peritoneal cavity can be entered with safety, and admitting that it can be divided without serious consequences for the removal of a neoplasm, there still exists with many, a hesitancy and dread in resorting to it for the relief of intestinal obstruction. But the cautious and patient researches, and the brilliant results of operations of Leichenstern, Bulteau, Rafinesque and Peyrot on the Continent, and those of H. O. Thomas and Frederic Teves, of England, and R. H. Fitz, of our country, have, in the minds of all thinking men, established laparotomy for intestinal obstruction as an authorized and legitimate surgical procedure. The time, we trust, is near at hand when no intelligent surgeon will hesitate to open the peritoneal cavity for the relief of intestinal obstruction when assured of the mechanical nature of the obstruction and of the strength of the patient to stand an operation of as much severity.

A brief report of two cases that came into my hands recently will illustrate not only the necessity of a resort to laparotomy in all such cases, but the importance of the operation being done as early as practicable. To dally with the case day after day till the patient's strength is exhausted and a high grade of peritonitis has set in, is to throw away precious time, and to rob the patient of nearly all chances of recovery.

Case I.—A stout, healthy lad, of 18 years of age, was seized on the night of the 12th of August, 1888, with a violent pain near the umbilicus. A physician was called, and various remedies were used, such as sinapisms to the abdomen, enemas and large doses of opium, but with no relief. I first saw the case at 6 P. M., on the 13th of August, twenty hours after the attack. He was almost in a state of collapse, bathed in a cold, clammy perspiration, and the pulse quick and feeble. Stercoraceous vomiting had occurred twice. The enemas brought away nothing except what lay below the point of strangulation. The abdomen was greatly distended, and tympanitic. Feeling assured that there was internal strangulation of the bowel, I at once determined to resort to laparotomy. An incision of three inches was made in the linea, alba, below the umbilicus. As soon as the peritoneum was opened, a coil of intestine, heavily congested, of a purplish color, made its appearance. Just at this point the strangulation was found. A diverticulum about three inches in length, and attached at its extremity by a shred of fibrous tissue to the mesentery where it joins the gut, formed with the ileum, from which it sprang, a loop, through which the coil of intestine had slipped and become strangulated. The portion of intestine confined was released by simply dividing the fibrous band and setting free the end of the diverticulum. This afforded immediate relief from pain, and in a short time there were one or more movements of the bowels, and large quantities of offensive gas and fecal matter were discharged. This patient made a quick recovery, and has enjoyed uninterrupted health since the operation. A delay of a few hours would have proved fatal in this case. The bowels above the strangulation were highly congested, and of a dark purple color. The patient's strength was failing rapidly from the violence of pain, excessive vomiting, and the want of nourishment.

Case II.—A young man, aged 25, general health had always been good till sometime during the month of November, when he had violent attacks of what was called bilious colic. By the way, a very unmeaning term, which should be expunged from medical nomenclature. The pain was in the lower portion of the region of the liver and around the umbilicus. Several times during the latter part of November and during the month of December, a number of gall-stones were passed, varying in size from that of the head of a pin to that of a pea. This was, of course, accompanied by violent pain, such as was experienced in previous attacks. On the night of the 2d of January, 1889, there was another attack. more violent and distressing than any of a previous date. The physician called, supposed it was a similar attack to those of former occasions, and resorted to the treatment that had previously afforded relief. The pain, though to some extent paroxysmal, was very intense all the time, notwithstanding that morphia was administered in half grain doses every hour or two for more than twelve consecutive hours. Immense doses of purgative material were administered, in the shape of castor oil, Epsom salts, olive oil, rhubarb and calomel, with no benefit, but doubtless with more or less injury. In the afternoon of the 4th of January, about forty hours after the attack, stercoraceous vomiting came on and the patient got rid, through the mouth, of large quantities of fecal matter, fluid and offensive gas. This afforded more relief than all the anodyne, and the patient was able to take some milk and a little chicken broth, with apparent relish. But in the course of a few hours vomiting returned, and the milk and chicken broth were thrown up in a crude and undigested state, along with more stercoraceous matter. This condition of affairs continued until five o'clock on the morning of the 7th of January, 1889, nearly five days after the commencement of the attack. It was then that I first saw the case. There was no doubt in my mind, nor was there any doubt in the mind of the attending physician, as to the nature of the trouble. The whole abdominal region was greatly distended, from the ensiform cartilage to the pubis, and there was much tenderness. Pulse 140 and weak, temperature 104. In this emergency, what was to be done? To leave the patient as he was, was simply to turn him over to death. Laparotomy, severe and dangerous under far more favorable circumstances, was the only procedure that offered any hope. This could not promise more than one chance in fifty, in the condition the patient was then in. The consent of the family was readily obtained, and the patient was anxious for the opertion. At 6 A. M. on the 7th of January, 1889, I opened the peritoneal cavity by an incision of three inches in the linea alba, about one inch below the umbilicus, and search was made for the cause of the obstruction. The colon had become twisted on itself, and a knuckle of bowel had slipped through a slit or aperture in the omentum; and in addition a roll or band of omentum was pressing firmly upon it. The band of omentum was divided, the bowel drawn out and untwisted. This removed the cause of obstruction, and there was soon an audible explosion of offensive gas, followed in a short time by a discharge of fæcal matter.

This operation was in itself a success, and the patient may be said "to have died cured," for the obstruction was removed and all pain had entirely disappeared. Death took place thirty hours after the operation, from exhaustion.

What would have been the chances of this unfortunate young man, had the operation been performed earlier, is a question difficult of solution. Being young, with good habits and good health, it is my opinion that if the operation had been done three days earlier, about the time of the first appearance of stercoraceous vomit, he would have stood as good a chance for recovery as any who undergo the operation of laparotomy.

Case III.—A strong, vigorous man, æt. 44 years, general health, good, with the exception of occasional attacks of indigestion, consequent upon torpid liver, was seized on the 11th of October, 1889, with violent pain in abdomen. I first saw case on the 13th, about forty-three hours after the attack. Abdomen much distended, tender and tympanitic. Stercoraceous vomiting had occurred twice at intervals of two hours. Abdominal cavity was opened at once by incision four inches in length, a little below umbilicus. Abdominal walls were very thick, owing to superabundance of adipose tissue which somewhat hindered the operation and necessitated a longer incision than would otherwise be required. As soon as the cavity was opened, a mass of intestines, much distended and highly congested protruded. The cause of obstruction, which was intussusception or invagination in the ileo caecal region, had evidently not existed long, as no adhesions had formed, and was easily reduced by simply drawing out the invaginated portion. There was no effort at defecation after the cause of obstruction was removed, owing to a partial paralysis, caused by long-continued distension, impairing the contractile power necessary to establish peristaltic action. By the use of the aspirator, the fluid and gas were removed from the bowel, and then by gently pressing my hand along the surface of the bowel, the fecal mass was started, and by the aid of a stimulating enema, it soon found its exit through the rectum.

Operation success, and patient made a good recovery.

SELECTIONS.

Against Sectarianism In Medicine.* By Edward Jackson, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic.

The idea on which the following argument is based has been thus expressed by the late Prof. George B. Wood: "Conscientious convictions should be respected, even though based on ignorance and delusion, and so prone is the human intellect to every kind of aberration that we may readily admit the possibility of an honest conversion from orthodoxy in medicine to the wildest creed that ever sprang from a deluded imagination."†

There are many things to engender mutual distrust among practitioners of medicine, and set them against one another. Beside the rivalry, which often seems to preclude the possibility of kindly relations in every walk of life, there is much that is peculiar to our profession. The dogmatic way in which a professional opinion must be stated to make it clearly intelligent to the patient, is often at variance with the meagreness of the scientific facts that could be adduced to support it, and we must often speak positely of matters concerning which there can reasonably be great doubt; the demands of the sick-room for positive action are so opposed to the nice balancing of scientific probabilities—that the management of each case lays the physician open to controversial attack. Then, too, in the domain of medicine, so much is half-knowledge and surmise, there is so much room for honest difference of opinion, that uniformity cannot be looked for, while the issues that hang on the correctness of opinion are so important as necessarily to elicit strong feeling, making diversity of view particularly liable to end in strife.

But there are most weighty reasons why strife should be prevented. There is no attitude of mind more unsuited to the perception of truth, the observation and correct interpretation of phenomena, the exercise of the best judgment, than the controversial. The medical controversies of all times illustrate the evils of intolerance, the benefits of co-operation. Whether we study the struggle of the empirics and methodics, of Cullen and Brown, of Rush and most of his contemporaies, or the controversies over the tubercle bacillus, or the treatment of pyosalpinx in our own societies, the lesson is the same. All experience teaches that the condition of professional harmony and co-operation which renders the skill and learning of each available for the aid and instruction of all, furnishes the most efficient service to the community, and conduces most to the welfare, influence, and honor of the profession.

To associate all members of the medical profession in hearty good feeling and earnest co-operation has been the dream, the desire, the high purpose of our best leaders in professional organization. Such was the purpose that founded the American Medical Association, shaped its code of ethics, and drew to its support the best part of the profession. That purpose is fulfilled in so far as our organization is made to include every worthy member of the profession, and is defeated in so far as any are excluded. If, as a branch of the American Medical Association, we should stand for any one peculiar idea, it is for that of the organization of the whole profession into one body, as opposed to that of its organization upon lines of medical dogma into separate and antagonistic sects.

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* Read before the Philadelphia County Medical Society, September 25, 1889

† Introductory Lectures and Addresses.

In the process of organization it became necesary to indicate who should, and who should not, be regarded as members of the profession. But the only exclusive clause in our code of ethics reads: "No one can be considered a regular practitioner or fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry." The same paragraph of the code says: "A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements," but gives no definition of a regular medical education other than such as may be inferred from the foregoing passage, viz., thas it shall not be confined to the study of a single dogma, or set of dogmas, or neglect the aids of anatomy, physiology, or organic chemistry.

There is, however, a tendency to narrow the interpretation of the word "regular" until it shall no longer convey its proper meaning, namely, that the person to whom it is applied has successfully completed a full course of medical study; but merely that he belongs to a certain school or sect in medicine, which differs from other schools or sects mainly as to the importance of certain medical dogmas or doctrines.

As generalities are so easily misunderstood or misinterpreted, let us take a special case. In this city there is an institution called "The Hahnemann Medical College and Hospital." I certainly do not share the feeling that led to the naming of it from Hahnemann. Still it is conceivable that, in spite of its name, the study of anatomy, physiology, or organic chemistry will yield within its walls very much the same results as elsewhere; and the only fair way to judge whether or not its graduates have received a regular medical education is to examine its curriculum, and to find out how thoroughly that curriculum is enforced.

In judging how the compilers of our code of ethics used the phrase "a regular medical education," it should be borne in mind that at the time the code was drawn up there was no homœopathic medical college in existence. An institution to teach homœopathy had been started a few years before at Allentown, Pa. It soon became extinct. But it had conferred the degree, not of Doctor of Medicine, but of Doctor of Homœopathia, and its curriculum could not be fairly said to offer a regular course of medical instruction. At this time, too, the homœopathic medical societies consisted often largely of laymen, and a large proportion of those who were professing to practice homœopathy were as destitute of any medical education as many of the faith-curers of to-day. Such being their lack of qualification for medical practice, they, of course, fell under ban as irregular practitioners. But time that changes all things has wrought a transformation in the homœopathist that many of us have not fully realized. Consider the requirements for graduation in the Hahnemann Medical College, as set forth in its last annual announcement, and I know of no reason for doubting that these requirements are lived up to as well as are the corresponding requirements in most of the medical schools that we all agree are "regular." The course is a three years' graded course, the length of term six months. In anatomy, two courses, four lectures a week, and the text-books are Gray's and Wilson's. In practical anatomy, one course, one lecture a week; text-books, Holden's and Allen's. In physiology, two courses of lectures, three a week; text-books, Dalton and Foster. In general pathology, two courses, one lecture a week, with the use of Green's text book. In chemistry, two courses three lectures a week, and the text-books of Draper, Ganot, Fownes, and Attfield, with a course in practical chemistry, including laboratory work. The student is recommended to study: in surgery, the works of Bryant, Erichsen, Holmes, Gross, Agnew, and Smith; in obstetrics those of Playfair and Lusk. Even for practice of medicine he is sent to Loomis, Roberts, or Pepper's *System*; for therapeutics, to Stillé and Maisch's *Dispensatory*; for pharmacy and toxicology, to the *U. S. Pharmacopœia*, Mann on *Prescription-Writing*, Taylor on *Poisons*, Wood's *Materia Medica*. But the list need not be further extended. Suffice it to say that of all the text-books this institution recommends to its students, about two-thirds are of authorship unquestionably orthodox, while the remainder are largely compilations from sources equally creditable. Can it be claimed that those so educated have based their practice "on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology, and organic chemistry?"

For them to pretend that they practice an exclusive system of medicine is an imposture. But for us, by our attitude toward them, to support that pretence is imbecility. We do support it if we exclude them *en masse*, giving as our reason their system of practice.

But when it is admitted that they are practitioners who have received a regular medical education, it is claimed that they should be ostracized for false pretence. Let those who are guilty of false pretence feel such disapprobation. But the penalty may be made most effective by confining it strictly to those who have deserved it; and the guilt or innocence is to be determined separately for each individual case. I believe those connected with the institution I have referred to, do not place upon sign, or card, the words homœopathist, homœpathic doctor, or other words of similar import, and that they discourage such a practice. The announcement from which I have quoted bears the motto; "*In certis unitas, in dubiis liberatis, in omnibus charitas.*" The most prominent adherents of the doctrine of "like cures like," publicly deny that their practice is based exclusively upon it. Not long ago several of them resigned their positions in one of their hospitals in this city, rather than practice it exclusively in an institution founded for its illustration and propagation. The societies into which these practitioners have banded themselves make no profession of an exclusive dogma. Some, as the American Institution of Homœopathy, require no expression of belief whatever,

Much of what has been said of this group which is commonly regarded as made up of irregular practitioners may, with slight modifications, be said of another, the so-called electics. If I can understand the profession made by both of these sects, it is that they take experience as their teacher and guide. If the experience they follow leads them in certain directions to absurd conclusions, looking back upon the history of medicine I cannot therein find ground for their exclusion from all professional recognition. "Conscientious convictions should be respected."

The medical profession can never afford either to prescribe or proscribe opinions for its members. Whenever you divide medical practitioners upon a line of dogma, whether that line be to include the believers in a certain doctrine, or to exclude them, you introduce with all its evils sectarianism. Let us hope that the American Medical Association and its code of ethics, designed to bind together the profession into one harmonious whole, shall not, by false interpretations and failure to understand its catholic spirit, be suffered to hinder such a union.

An Ethical Question.* By Solomon Solis-Cohen, A. M., M. D. Professor of Clinical Medicine and Applied Therapeutics, Philadelphia Polyclinic and College for Graduates In Medicine.

It is true that no man is so sure of the accuracy of his knowledge or the wisdom of his judgment, that he can refuse to respect the honesty with which others maintain opinions from which he may dissent. Nevertheless there are certain facts of nature which have passed beyond the region of opinions into that of established truths; there are certain methods which the well-settled judgment of scientific men requires to be pursued in our interrogation of nature for yet other truths. To respect the honesty with which a man entertains beliefs contradicted by all that is known of natural law, and by the collective experience of mankind, is one thing; to dignify manifest absurdities with the name of scientifiic opinion, is quite another.

The Rev. John Jasper and the Grand Llama of the Trans-Baikal are honest enough in their opinion that the sun makes a daily circuit about the earth; but scientific men and the world of thought they influence, have long since accepted as final the contrary teaching of Copernicus and Galileo, and will not now intermit more important labors to debate the question.

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* Read as a reply to Dr. E. Jackson's paper on "Against Sectarianism in Medicine," before the Philadelphia County Medical Society, September 25, 1889.

But though we may respect the man who honestly errs, we are not called upon to entertain any such feeling toward him who is ignorant through wilfulness; and as for him who, knowing truth, wears for hire the livery of error, even divine charity can ask us to do no more than withhold judgment.

I have no desire to attack the opinions or the characters of any body of men—certainly not those of the homœopathic practitioners of this city, many of whom I have the pleasure of knowing as cultivated and honorable gentleman. When, however, the charge of illiberality is made against the members of this Society and of the profession of medicine, because they refuse to recognize certain practitioners as entitled to the honored name of physician, it becomes proper, in repelling that charge, to exhibit plainly the reasons which make such recognition impossible.

The question interjected by Dr. Jackson into the deliberations of this Society, when stripped of the sophistry with which it has been overlaid, is a very simple one. Disregarding the attempts to erect fine distinctions upon unsubstantial grounds, the gist of the matter may be tersely and bluntly stated as follows: Can physicians conscientiously consult with, or recognize as members of their profession, practitioners of that system of therapeutics known to the public, in the language of its founder, as "homœopathy"?

Proceeding to discuss this as as a casuistical question, there are two hypotheses to be taken up in turn, upon each of which an independent answer must be given.

The first hypothesis is that all who are called homœopathists are what they profess to be, and allow the public to consider them; namely, practitioners of homœopathy: homœopathy being the system of therapeutics invented by Hahnemann, and asserted by its founder (*Organon*, § 53) to be based upon an "eternal and unerring law of nature," expressed in the formula "*similia similibus curantur*" (or *curentur*). Upon this hypothesis I shall show by citations from the most authentic and authoritative exposition of homœopathic doctrine and practice namely, Hahnemann's *Organon*, that consultation between physicians and homœopathists could be productive of no result; for there is no possible common meeting-ground. It is not a mere question of the expediency of this or that therapeutic measure in a given case, such as often comes up in discussion between physicians, but one of fundamental difference in principle, making agreement as to practice impossible—if both be honest. Their doctrines and their practices, whichever be right and whichever be wrong—a question which it is needless to discuss—are mutually antagonistic and destructive. From this point of view alone, and leaving out of consideration the larger ethical questions of public duty, it is obvious that a consultation would be condemned from the first to be a barren union, and must therefore be an immoral one. The question as to its permissibility will thus be at once answered in the negative; and it has so been answered by sincere homœopathists.

The second hypothesis is, that men who profess to be homœopathists, who allow the public to consider them such, and who accept the fees of persons desiring homœpathic treatment, are not what they profess to be, but something else. It matters not what that something else is; so long as it is not consistent with homœopathy, it is something that contradicts the profession made to the public.

Upon this hypothesis—which I do not allege represents the existing state of affairs, but which if I understand Dr. Jackson aright, he distinctly declares to be the case so far as concerns the Managers of the Hahnemann Medical College of Philadelphia—I shall contend that there is a very important question of public honor and private honesty involved, and that until it can be shown that it is right to take money or other valuable considerations under false pretences, no honorable man can consult with practitioners of this type—if any such practitioners exist—for he would by so doing, become accessory to a fraud, Let me repeat, in order not to be misunderstood, that I do not assert that anybody whatever is guilty of the false pretence of professing to be a homœopathist while in reality he is something else. I shall show by citations from the gospel of homœopathy—namely, the *Organon* of Hahnemann — what homœopathy is. Then, if the state of affairs described by Dr. Jackson is actual, and he is not laboring under a misapprehension as to the facts, it will become self-evident that the practitioners whom he describes have been refused the name of homœopathists by the one who had the best right to define that name; * and the question as to the propriety of consulting with them will again be answered in the negative.

My propositions, then, are three:

1. Either the so-called "new-school physicians" are what they profess to be—homœopathists—or they are not.

2. As to the honorable men who are what they profess to be: We cannot honestly consult with them, nor do they wish to consult with us—because consultation would be fruitless.

3. As to the not-honorable men who are not what they profess to be: We cannot honestly consult with them, because we would become participants in an act of deception.

This is the issue as I understand it, freed from glossing and concealing verbiage. Truth requires it to be frankly stated and as frankly met.

To prove these propositions I must establish two things:

1. That the practitioners in question profess to be homœopathists, or "new-school physicians."

2. That the principles and practice of homœopathy, as set forth by competent authority, are such as to be utterly irreconcilable with the principles and practice of medicine and with the sciences upon which medicine is founded, as these are understood by the great body of modern physicians and by the members of this Society.

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* See a paper by Edward Bayard, a homœopathist by connection, and not "for revenue only," entitled "Plea for Pure Homœopathy Against Eclectic Homœopathy." Proceedings in the Homœopathic Medical Society of the County of New York, on March 8 and 13, 1878.

The first of the facts I must establish, I did not until to-night, understand to be denied by any one. It has seemed to me as much a matter of public knowledge, as the fact that President Harrison professes to be a member of the political party called Republican, and that ex-President Cleveland professes to be a member of the party called Democratic, that the Archbishop of Canterbury is a dignitary of the Anglican Church, and the Cardinal at Baltimore, of the Roman Catholic Church. For the sake of completeness of proof, however, let me cite these facts: There is in existence a "Homœopathic County Medical Society" in Philadelphia, a "Homœopathic State Medical Asociation" in Pennsylvania. Members of these bodies succeeded in defeating the efforts of this Society, and of the Medical Society of the State of Pennsylvania, to secure the passage of an act establishing a State Board of Examiners and Licensers, by alleging the existence of separate and irreconcilable "schools of medicine," and thus securing the adoption of an amendment providing that the majority of the proposed Board should not be adherents of any one "school." Not only does the Hahnemann Medical College connect itself by its name with the author of the *Organon of Homœopathic Medicine*, in whose mystic metaphysical brain the strange delusion originated; but it distinctly recognizes as its associates other homœopathic colleges, and accords their students and graduates such privileges as colleges of medicine accord to students and graduates of colleges recognized by them. Furthermore, I have never heard, nor do I think Dr. Jackson has ever heard, of cases or fees having been refused by the professors or graduates of the Hahnemann Medical College on the ground that patients desired the services of homœopathists, while said professors and graduates were not homœpathists. Nor has there been any public announcement that the Hahnemann Medical College is not a homœopathic college, or that its professors or graduates have realized the errors of homœopathic ways and have repented and abandoned them.

If, then, the case of Dr. Jackson rests upon the fact that the Faculty of the Hahnemann Medical College and its graduates are not professedly homœopathists, I respectfully submit that the very parties concerned would not endorse his special plea, and it consequently falls to the ground without further waste of words. Until the teachers and practitioners in question publicly repudiate homœopathy, I cannot see why we should assume that they have clandestinely done so. And until they do repudiate homœopathy, as I shall show in a moment, a Surgeon-General's Library of scientific text-books could not neutralize the absurdities to which its profession commits them.

I have devoted to this subject much more time than it deserves, in order to prevent misunderstanding of the position. I confess, that to carry on my argument I must establish the fact that the profession of homœopathy is made by certain persons. I claim that I have established that fact by citing certain matters of public knowledge. Dr. Jackson must either admit that I have established this point, or he must frankly meet it and show that these persons neither actively profess to be homœopathists nor tacitly allow their patients and the public so to consider them.

Secondly, I must show that homœopathy and scientific medicine are absolutely irreconcilable; and I must show this upon unimpeachable authority.

It is neither my purpose to defend those against whom the inventor of homœopathy directed his invective and his sarcasm, nor to detract from his possible* services to medicine in attacking some palpable errors of his time. Nor do I wish to debate the question of the truth or error of the homœopathic doctrine. To waste time in demonstrating before this body the fallacies and gratuitous assumptions upon which that doctrine is founded, would be as superfluousas it is needless to my argument. For whether the so-called "law of homœopathic cure" be a profound truth or an insane delusion, all that I need show is its incompatibility with what we recognize as sound teaching concerning the nature of disease, the action of remedial agents, and the manner in which the physician should proceed in investigating the one and applying the other.

If the authority to which I shall refer for every step in this proof is not beyond cavil, then, indeed, may we at once admit that the moon is made of green cheese, that two and two never did make four, and that words have no meaning. It is the sacred scripture of the great prophet of the "new-school of medicine"—Samuel Hahnemann's *Organon of Homœopathic Medicine*, in an authorized translation,† edited by the prophet's greatest disciple and apostle in America, C. Hering, and certified by the "Chairman of the Board of Directors" of the "Academy of the Homœopathic Healing Art," at Allentown, Pa.

If I am not in error, the *Organon* of Hahnemann still holds an honored place as a text-book at the Hahnemann Medical College of Philadelphia, as it does at the homœopathic colleges of other cities.

Time necessitates the limitation of the number of quotations,‡ and the selection of the most characteristic. It will be impossible to cite *verbatim* the full text of every section to which reference may be made; but wherever I have condensed the loose-jointed and bewildering verbiage, I have scrupulously endeavored to be fair and correct.

From the *Organon* of Hahnemann I purpose to show four things, any one of which is fatal to the possibility of fruitful consultation.

1. Homœopathy as expounded by Hahnemann, its inventor, is exclusively a system of drug-therapeutics; explicitly renouncing the the aid of the *vis medicatrix naturæ*;§ and denouncing the study of

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* Possible, but exceedingly problematical; inasmuch as he inveighed indiscriminately against error and truth, bad practice and good practice; and the substitute he offered has been proved worthless.

† New York, William Raddle, 1849.

‡ For the same reason no reference has been made to the excellent expositions of the fallacies of homœopathy by various writers.

§ *E., g.* op. cit., pp. 40, 42, *et seq.*

anatomy, physiology, pathology, ætiology, semeilology, nosology, and diagnosis.

2. It is an arbitrary and exclusive system; inflexible; and claiming to be infallible.

3. It expressly prohibits the endeavor to interpret morbid symptoms as indications of changes in the structure or functional activity of definite tissues and organs; declares that an all-wise Providence has denied to man the power of learning what takes place within the human body; with logical consistency rejects the attempt to direct treatment against definite pathological conditions and processes or their dangerous consequences; and fixes attention upon the symptoms alone, independent of their origin, as constituting the whole of the disease, and affording the sole indication for treatment.

4. The doctrine of *homœopathia*— or the casting out of "natural diseases" * by artificial diseases closely resembling them, but excited by drugs—is inextricably bound up with the practice of infinitesimal dosage.

If these points be established, the logical inference will be not only the utter impractibility of consultations between physicians and genuine homœopathists; but also that those who make diagnoses—direct treatment to the production of definite effects upon particular tissues or organs—give any other than "homœopathic" remedies—refrain from the use of drugs in any case—or give drugs in any other than infinitesimal dosage—are not true homœopathists. If any such profess to be homœopathists, we will be compelled to conclude that they are either deliberate deceivers or, at best—in the language of Hahnemann—members of "the new mongrel sect" who try to "find a pretext everywhere for . . . exceptions to the general rule, in order to introduce their allœopathic palliatives, with other mischief of a like character, merely to save themselves the trouble of searching for suitable homœopathic remedies for every case of disease—one would say, to save themselves the trouble of being homœopathic physicians, though they wish to be considered such. But," continues the prophet, whose hearty contempt for such insincerity provokes admiration, "their deeds will follow them; they are of little moment." †

I. Homœopathy is exclusively a system of drug therapeutics.

The introduction to the *Organon* of Hahnemann consists principally of denunciations of all medical practice prior to, or differing from that of, the author; and especially of the efforts of physicians to discover the causes of disease, in order to direct treatment, where possible, to the removal of those causes. Nothing, according to Hahnemann, is more vain and irrational than to endeavor to seek out the cause of disease. "It was the boast of the former schools of medicine," ‡ he says, "that their doctrine alone deserves the title of 'rational art of healing,' because it was pretended that they alone sought after and removed the morbid cause and followed the traces of nature herself.'" A vain boast, because "by far the greater number of diseases [are] of dynamic origin as well as of a dynamic nature, and their cause therefore [does] not [admit] of discovery to the senses." Among the irrational procedures committed in this foolish search after causes, he especially condemns the habit of "comparing, on the one hand, the normal state of the parts of the dead human body (anatomy) with the visible changes which those parts had undergone in subjects that had died of disease (pathological anatomy), and on the other, the functions of the living human body (physiology) with the endless aberrations to which they are subject in the various stages of disease (semeiotics, pathology), and drawing from thence conclusions relative to the invisible manner in which the changes are brought about in the interior of man when in a diseased state." *

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* The two diseases fight it out, and the patient escapes,

† Note to § 67, ed. cit., p. 132.

‡ Ed. cit., pp. 26 and 27.

Thus if—together with ætiology—anatomy, physiology, pathological anatomy, semeiology, and pathology by name, and diagnosis by implication, are denounced as senseless and misleading, there is little left of medical science; and of its art, simply applied therapeutics. That this is the most important to the patient is true; and, it is the goal to which our studies of normal and morbid anatomy of physiology, pathology, and other sciences, are to lead us; but surely none here present will subscribe to the doctrine that the goal can be reached by any other road than that which the inventor of homœopathy so explicitly rejects and denounces.

One or two additional citations will serve to show more clearly the significance for our second main hypothesis, of this position of Hahnemann's. Meaning to be satirical, he says of physicians: "The sublime project of discovering . . . some internal and invisible cause of disease resolved itself . . . into a search, guided onward by the symptoms, after that which they might term to be the generic character of the existing malady. They endeavored to find out whether it was spasm, debility, or paralysis, fever or inflammation, induration or obstruction in some one of the parts; excess of blood (plethora) or increase or deficiency of oxygen, carbon, hydrogen, or nitrogen in the fluids; exaltation or depression of vitality in the arterial, venous, or capillary system; a defect of relative proportion in the *factors* of sensibility, of irritability, or of nutrition." †

Allowing for the animus of the author, for changes in terminology, and for the progress of science, this would describe with a sufficient degree of accuracy the course still pursued by the intelligent physician in the endeavor to reach a diagnosis. To Hahnemann, however, such a course was fit subject for ridicule, and in a foot-note he says:

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* The context, which I have omitted, denounces, it is true, some particular conclusion said to be thus reached; but our concern being only with the explicit condemnation of the method, it is of no moment whether the conclusion be or be not truthfully stated or justly criticised.

† Ed. cit, p. 28.

"Every physician adopting a treatment of such general character"—that is to say, every physician who seeks to make a diagnosis, or to arrive at a knowledge of the morbid changes in the organism which he is called upon to combat—"however unblushingly he may affect to be a homœopathist, is and always will remain a generalizing allœopathist, as without the most special individualization *homœopathia* has no meaning." Surely no language can be plainer than this!

This denunciation of diagnosis and nosology, following, as it does, the explicit rejection of anatomy, physiology, and the other branches of medical science, and showing the complete dependence of the whole homœopathic system upon a deliberate shutting out of the light, becomes readily understood upon looking further into the peculiar theories of Hahnemann. He assumes the existence of an "immaterial vital principle pervading the physical organism" (§ 11). "It is solely the morbidly affected vital principle which brings forth diseases* (§ 12)." "The vital principle as a spiritual dynamis" (whatever that may be) "cannot otherwise be assailed and affected than in a spiritual (dynamic) manner; neither can such morbid disturbances be removed by the physician, except in like manner by means of the spiritual (dynamic virtual) countervailing agency of the suitable medicines acting upon the same vital principle" (§16).

Here we have not only the affirmation of the spiritual nature of disease, of its causes and of its cures—explaining the futility of the rejected studies which concern themselves with the material body, and its material morbid changes—but also the distinct assertion that diseases can only be removed by medicines; while again and again, throughout the introduction, and in a mass of foot-notes to various sections of the *Organon*, are violent denunciations of the idea of trusting in any degree whatever to the efforts of nature, or of accepting as a guide to therapy, indications derived from a study of the natural history of disease. Let me cite one of the mildest of these maniacal outbursts. "The miserable and very imperfect attempts which the vital powers make to assist themselves in acute diseases, is a spectacle that ought to excite man to use all the resources of his learning and wisdom, to put an end, by a real cure, to this torment which nature herself inflicts. If nature cannot cure, homœopathically, a disease already existing in the system, by the production of a fresh malady *similar* to it (§§ 43-46) —a thing not often in her power to affect (§ 50) . . . we see nothing but painful and often dangerous efforts of the constitution to save itself at all hazards, efforts of which death is most frequently the result." †

I have thus, I believe, established the proposition that homœopathy, as expounded by Hahnemann, is exclusively a system of drug-therapeutics.

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* Compare also this gem from the introduction (Ed. cit., p. 35.) "Diseases will not, out of deference to our stupidity, cease to be *dynamic aberrations which our spiritual existence undergoes in its mode of feeling and acting*

† Ed. cit., p. 42.

II. It is an exclusive system, arbitrarily devised, inflexible, and claiming infallibility,

"Observation, reflection, and experience have unfolded to me," says Hahnemann, "that in opposition to the old allœopathic method, the best and true method of cure is founded on the principle *similia similibus curantur.* To cure in a mild, prompt, safe, and durable manner it is necessary to choose in each case a medicine that will excite an affection similar to that against which it is employed. Until the present time no person has ever inculcated this homœopathic mode of treatment, and yet more, no one has ever put it into practice. . . . In all ages the diseases which have been cured by medicines . . . have yielded, although without the knowledge of the physician, to a homœopathic remedy . . . a remedy in itself capable of exciting a morbid state similar to that whose removal is effected." *

Having assumed that for every disease there must be a remedy—and that this remedy is a medicine—he further assumes that medicines can accomplish the cure of disease, only in one of three ways: (1st) by exciting a disease similar to the natural disease, which he calls "homœopathy;" or, (2d) by exciting a disease opposite to the natural disease, which he calls "antipathy;" or (3d) by exciting a disease which is neither similar nor opposite to the natural disease; and this, which he incorrectly states is the common practice of physicians, he dubs "allœopathy" (§ 53). Antipathy and allœopathy have been tried up to his time and have failed; consequently, homœopathy must be the only true method (§§ 24, 61, *et al.*).

The "discovery" of the homœopathic "law" was not the result of experience, but, according to his letter to Hufel, † was reached by reflection, before any experiment had been made. "God," he says in effect, "made diseases; God must also have made a remedy for each disease; and He indicates its use by giving it power to produce in healthy persons symptoms like those of the disease it is intended to cure."

I have used the expression "exciting disease" in referring to Hahnemann's exposition of drug action. It is his own language. In many cases it is direct, as in §29, where he says in conjectural explanation of the homœopathic cure, "The natural morbific power terminates . . while the *medicinal disease*, which usurps its place, being easily subdued by the vital power, is . . . extinguished in in its turn." But it is also implied throughout when he speaks of the symptoms produced by drugs, because it is one of his fundamental principles that, so far as human observation is concerned, symptoms and disease are one and the same(§§ 11-21).

Our way is now clear to set against one another certain fundamental propositions of Hahnemann's: "Every curable disease is made known to the physician by its symptons" (§14). "The physician has only to remove the totality of the symptoms and he has cured the entire disease" (§17). "The totality of the symptoms is the sole indication in the choice of the remedy" (§18). "The morbid symptoms which medicines produce in healthy persons are the sole indications of their curative virtues in disease" (§21). "The homœopathic method, or that which employs medicines producing symptoms similar to those of the malady, is the only one of which experience proves the certain efficacy" (§24).

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* Ed. cit., pp. 59, 60.

† Cited by Henderson: "Homœopathy Fairly Represented." Phila., 1854. Pp. 116 et seq.

"It is as impossible that there should be any other true method of curing dynamic diseases . . . besides homœopathy, as that more than one straight line can be described between two given points" (note to § 109). "By this method alone can we cure diseases in the most speedy, certain, and permanent manner, because it is grounded upon an eternal and unerring law of nature" (§53).

These citations should be sufficient to establish the second thesis —namely, that homœopathy is an exclusive system, that it is arbitrarily devised, that it is inflexible, and that it claims to be infallible. "An eternal and unerring law of nature" can admit of no exception and no failure. Upon the surface of the earth, at the center of the sun, or at the extremest limit of the orbit of Neptune, gravitation acts with a force proportional to mass and inversely as the square of distance. In the tropics, as in the arctic regions, like poles of magnets repel and unlike poles attract. The atomic weight of carbon, the valence of hydrogen, differ not in the brain of man, or in the fossil leaf. These are matters governed by "eternal and unerring laws of nature." If the "law of homœopathic cure" is entitled to be called a law, it must be equally infallible and exclusive to-day, as when Hahnemann penned his sweeping claim. Maintenance of that claim precludes any modification in principle or practice; "More than one straight line *cannot* be described between two given points." Abandonment of the claim is abandonment of homœopathy.*

III. Homœopathy forbids diagnosis† and condemns the attempt to direct treatment to definite ends, etc.

It follows from what has been quoted, and is repeatedly, explicitly, and elaborately stated by Hahaemann, that the sole function of the homœopathic practitioner, after having inquired minutely into the symptoms of the case before him, is to select from among the various medicines known to him, that one the "disease-producing power" of which most closely corresponds to the "natural disease" (§§ 83 et eq., 146 et seq.). This is the sole and infallible method (§ 109). If additional evidence is required on this head, the following should suffice:

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* See Declaration of Homœopathic Principles; with Comments by Adolph Lippe, dated Philadelphia, Feb. 4, 1878; and Protest against a certain Resolution adopted by the Homœopathic Medical Society of the County of New York; signed by C. Lippe, E. Carlton, Jr., S. Baruch, et al. Reprinted from *The Organon*, Liverpool, April, 1878. The resolution *which was afterward rescinded*, declared that belief in the principle *similia similibus curantur* "does not debar us from recognizing and making use of the results of any experience;" and it is protested against, because, "*not being in accordance with the teachings of Hahnemann,* [*it*] *cannot be accepted by Homœopaths.*"

† See especially § 100

"There is nothing for the physician to cure in disease but the sufferings of his patient, and the changes in his state of health which are perceptible to the senses—that is to say, the totality or mass of the symptoms by which the disease points out the remedy it stands in need of; every internal cause that could be attributed to it, every occult character that man might be tempted to bestow, are nothing more than so many silly dreams and vain imaginings" (§ 70). "Just as little as we can witness what is passing in the interior of our bodies in a healthy condition—and as certainly these processes remain concealed from us as they lie open to the sight of Omniscience—just so little can we perceive the internal operations of the animal frame, when life is disturbed by disease." *

"They" (physicians) "likewise suppose that by removing a polypus by ligature, extirpating a tumefied gland . . . dissecting out the insulated cyst of a steatomatous or meliceretous tumor, operating for aneurism, fistula lachrymalis, or fistula in ano, amputating a cancerous breast . . . etc., to have cured the maladies in a radical manner and destroyed their cause. . . . *But mark what follows:* New forms of disease . . . infallibly manifest themselves sooner or later . . . being always worse than the primitive affection. . . . These ought to undeceive them and prove that the evil has an immaterial cause, the deeper concealed because its origin is dynamic, and it cannot be destroyed but by dynamic power." †

If such obvious procedures as tying an artery for aneurism, dissecting out a sebaceous cyst, or amputating a cancerous breast, are thus condemned, what shall we think of such impious attempts to pry into the processess going on in the interior of our bodies—"as surely concealed from us as they are open to the sight of Ominiscience"—as are involved in the diagnosis of consolidation of a lung, stenosis of a cardiac orifice, or tumor of the brain? And what of measures that disregard symptoms *in toto* and endeavor to attack the pathological process underlying them?

IV. The doctrine of "homœopathia" is inextricably bound up with the practice of infinitesimal dosage.

"The appropriation of a medicine to any given case of disease does not depend solely upon the circumstance of its being perfectly homœopathic, but also upon the minute quantity of the dose in which it is administered. If too strong a dose be given, it will infallibly injure the patient. The impression it makes is felt more sensibly because in virtue of its homœopathic character the remedy acts precisely on those parts of the organism which have already been most exposed to the attacks of the natural disease" (§ 275). "A strong dose of homœopathic medicine would do more harm than the dose of an allœopathic medicine of equal strength; for in that case the homœopathic aggravation—that is to say, the artificial malady excited by the remedy in the most suffering parts of the organism—is carried to a height that is injurious" (§ 276). This, of course, we should naturally imagine; that in so far as the effects of medicines do at all resemble the symptoms of diseases, the result of giving such medicines would be highly injurious. Instead of being taught by this the folly of his methods, Hahnemann, being, like Ephraim, wedded to his idols, takes refuge in a new absurdity, and concocts the doctrine of infinitesimals.

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* Introduction, foot-note, ed. cit., p. 42.

† Ed. cit., p. 33.

In order to determine just how far homœopathic medicines would have to be attenuated in order to be rid of their power for evil, Hahnemann had recourse to experience; and he found it necessary so to dilute the dose that it amounts to practically nothing. The well-known process is to dissolve two drops of medicine in ninety-eight of alchohol, one drop of this in ninety-nine more of alcohol, and so on until the necessary minuteness is attained, at from the tenth to the thirtieth dilution:* provided care be taken not to shake the containing vessels more than twice at each successive dilution, as otherwise too much "dynamic spirit" would be freed; and ten shakes might even make the medicine so powerful as to be extremely dangerous.

These directions and cautions are found in the *Organon*, beginning with Section 269, and elaborated in the succeeding twenty sections.

It is possible, however, for even the minutest dilution of homœopathic medicine to be too strong for a very sick patient. "In that case" we find† that "it will be sufficient to let him smell it once." In the process of smelling,‡ the patient should place a vial containing one globule of sugar the size of a mustard-seed, impregnated with a sufficiently attenuated dilution of the desired remedy, under one nostril, and take one momentary inhalation. If the dose is intended to be stronger, he may then repeat with the other nostril. The operation of the remedy continues as long as when the same drug is taken in substance, and hence the dose must not be repeated at shorter intervals. In Section 247, we are told that "the most subtile doses of the best chosen homœopathic medicines" are to be repeated at intervals of fourteen, twelve, eight, to seven days; except in acute cases, when the periods may be abridged to twenty-four, eight, or four hours, and in the most acute cases down to five minutes.

In a case of pneumonia, I suppose, the patient might safely smell the medicine once in four hours; in a case of mitral stenosis, once in a week;§ and in a case of chronic gastric catarrh—not at all.

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* Representing one grain of a medicinal substance dissolved in sufficient alcohol "to make one hundred and forty billions spherical masses extending from limit to limit of Neptune's orbit, or a quantity equal to many hundred spheres each with a radius extending from the earth to the nearest fixed star."—*Simpson*.

† Note to § 285.

‡ Page 209.

§ "Let the patient once strongly smell a globule as large as a mustard-seed impregnated with *hydrarg. met.* X., which is to be allowed to operate about nine days."—Page 208.

The citation of this nonsense is not unfair quibbling upon my part. It is the essential part of the true homœopathic practice. Any fair-minded person who reads what Hahnemann says upon this subject, his frequent strong, repeated affirmations that "the more homœopathic the medicine, the greater danger" if it be given in any but the most attenuated doses; his denunciations of the "pretended homœopathists" who give larger doses than he directs; his elaborate and minute directions as to the manner of preparation; forbidding powders, for example, to be triturated "with force"* for more than one out of the three hours which he considers necessary to effect liberation of the spiritual dynamic essence; any fair-minded man, reading all this, cannot but admit that the doctrine of similars and the doctrine of infinitesimals must stand or fall together.

And that he is painfully in earnest as to the smelling business, is evidenced by the following statement—a statement which I certainly do not care to dispute:" All that is curable by homœopathy may with most certainty and safety be cured by this mode of receiving the medicine."†

Does it need comment of mine to show how utterly impossible it is for a physician to meet in consultation one who gives the slightest credence to the rot which I have quoted?‡ The physician's first course, as I have had the pleasure of observing in cases in which I have solicited aid from the special knowledge of my friend Dr. Jackson, is to make a diagnosis; the homœopathist is bound to reject diagnosis. The physician seeks out the causes of disease, that he may remove them, if possible; that he may intelligently combat their effects; that he may prevent disease in the future. The homœopathist is committed to the doctrine that disease consists only of symptoms whose cause has been concealed by an all-wise providence. The physician may use or omit drugs; the homœopathist is bound to employ drugs, though, it is true, in such infinitesimal doses that if needless they will at least be harmless. But this negative virtue of the attenuated medication vanishes in cases in which drugs are imperatively needed, for then the homœopathist is precluded from employing them in effective quantity; because, if homœopathic, they will infallibly do harm; and, if not homœopathic, his system declares them to be murderous.

But it may be said that the homœopathist is no longer bound by the *Organon* of Hahnemann; he is open to the lessons of experience, and homœopathy is no longer to him an infallible law of nature, but an occasional guide in practice.

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* Page 225.

† Note to Section 288, p. 226. It is a cheap method, too. He states that one globule will retain its virtues undiminished for twenty years, though it had been smelled during that period a thousand times. Let alienists tell us how much dependence can be placed upon the observation of a man who seriously makes such assertions.

‡ And I have by no means cited the most ridiculous passages of the *Organon*. I have said nothing of the "psoric miasm," for this is not essential to homœopathy; and, indeed, like the exceptions Hahnemann himself was compelled to make concerning "surgical diseases" and the "*causa occasionalis*," logically contradicts it.

This brings us face to face with an exceedingly unpleasant portion of our task, that of considering our second hypothesis; namely, that men who now profess to be homœopathists are in reality something else. However, as we are merely considering it as a hypothetical, casuistical question, we may at least avoid direct personal reference.

Can one remove the foundation and expect the building to stand? Considering the origin of homoœpathy, its claims to universal and infallible application, the explicit declaration of its founder that no other system could be true, even as more than one straight line could not be described between two given points; it must be much more than an occasional guide in practice, or it must be what scientific men regard it, a baseless fabric of assumptions. As has been well said by Prof. Gairdner, the vigorous imagination which can attribute nine hundred and thirty symptoms to charcoal, and ten hundred and ninety to oyster-shell, can find little difficulty in fitting a sufficient number of the confused mass of "provings" belonging to any drug, to any case in which recovery may have taken place coincidentally with its use. Mere experience, then, need not take any out of the homœopathic ranks, if he be not possessed of a scientific conscience whose crying refuses to be quieted with sugar plums.

But a homœopathist cannot deliberately reject Hahnemann's *Organon* and remain entitled to the name. Hahnemann invented the name, or at least gave it its peculiar significance; Hahnemann has defined it, and no one has the right to alter Hahnemann's definition. He put forth homœopathy as a new system in medicine, differing *in toto* from all other symptoms, rejecting alike the methods of investigation and the methods of treatment pursued by the great body of physicians. As he formed it, so it must remain; for he claimed the authority of a divine revelation,* the infallibility of "an eternal and unerring law of nature."

If the barrenness of its history during the years that have been so fruitful for medical science; if the brilliant results of that patient search after material morbid agencies so derided by Hahnemann; if the triumphs of preventive medicine, in which a system founded upon drug-giving could have, and has had, no part; if the progress of physiological therapeutics, which having learned how remedies act, now joins forces with chemistry to attack the why:—if these things unite with continued experience in the sick-room, to prove the wretched inadequacy of Hahnemann's system; so that even in the temple builded to his name strange fires are burning upon the altar, so that even among his priests and votaries the light of the fires of science is breaking through and dispelling the gloom of his mystic and obscuring speculations:—if intelligent men, entering the homœopathic ranks through predjudice or force of associations, and in ignorance of the facts, have learned by study and experience the hollowness of the faith to which they profess allegiance—then there is for these men but one honorable course—the public acknowledgement of the facts. It may be unpleasant. It requires moral courage. But it is right, and it will compel respect.

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* . . . "The certainty of medicine depends on the establishment of fundamental principles, based on natural laws, to guide the Healer in his Therapeutics; and . . . Samuel Hahnemann *was allowed to reveal to the world* such principles and their application for the cure of the sick, in his *Organon of the Healing Art* . . ." Declaration of Homœopathic Principles, loc. cit.

But so long as a name having commercial value as a trademark is retained by any body of men so long do the barest principles of trade-honor bind them to all the implications of that name. If they can reconcile it with their consciences to continue to bear a name to which they have lost the right we at least dare not impute to them, without sufficient evidence, conduct so base and cowardly; or if we have such evidence, then we must not, by condoning duplicity, become partakers in dishonor.

ORIGINAL ABSTRACTS.

By Dr. Kirkland Ruffin, Norfolk, Va.

An Address on the Treatment of Cancer of the Rectum. By T. R. Jessup, F. R. C. S. Delivered at the Opening of the Section of Surgery at the Annual Meeting of the British Medical Association. From the *British Medical Journal.*

In selecting the subject the author had in mind only the surgical, or rather operative, treatment of cancer of the rectum; but he alluded briefly to the help which may be obtained from medicines. He believed that no curative drug had been found but he hoped and even had faith that it would be discovered in the future. Much, however, can be done medicinally to alleviate the great suffering of the later stages. Washing out two or three times a day with simple warm water, followed by a suppository introduced in the empty bowel, containing cocaine, belladonna, morphine, and iodoform has given most comfort ing results. Again laxatives seem to be called for when there is disease of the upper parts of the rectum and the anal portion is free; and astringent measures and such as tend to solidify the fæces when the anus has been attacked and the sphincter no longer act and as a consequence the liquified fæces and discharges are constantly dribbling. Operative measures were considered under two heads, namely, those for the ablation of the disease and those for diverting the fæces from their passage through the rectum.

Proctectomy—an operation which has only of late been forced into prominence by the persistence and success of our German colleagues—aims at the complete eradication of the disease, and therefore, if successful as an operation, not attended by an undue mortality or followed by detracting disadvantages, it must take its stand as an established surgical procedure. He is not at all sure but that it may not already be considered so. Published reports encourage us to believe that, with the perfecting of procedure, it only remains to determine in what cases proctectomy is or is not to be advised. As yet his experience is limited to seven cases. Of these one died from the primary collapse from the operation. The patient was a poor curate; the disease extensive, occupying four-fifths of the circumference of the gut just above the anus and extending so high that the finger couldn't reach healthy mucous membrane. The remaining six obtained a varying amount of relief. In the three more favorable, the disease was situated in the posterior or lateral walls of the rectum and well within the reach of the fingers, and these are all alive; one apparently well at the end of twenty-one months, and showing no signs of return or of much inconvenience; the second with an equally favorable result at the end of seventeen months; while the third, operated on nine months ago, had a speedy return of the disease and will probably die at an early date. A fifth case was that of a lady, operated on thirteen months ago, in whom there has been no return of the disease, but unfortunately a dressing of undiluted salufer caused sloughing and a recto-vaginal fistula through which fluid fæces can escape. In the two remaining cases the cancer was situated at a higher level and below each was a hard nodular ring. In both, without much trouble, all the diseased tissue was removed and in one the edges of the mucous membrane were brought together and sutured, but in the other —a woman—Douglas' peritoneal pouch was extensively wounded and no attempt was made at suturing but drainage was secured by the introduction of a large celluloid tube. Both cases recovered and were well when last heard from, five months in one case and twenty-six weeks in the other having elapsed since the operation. In four of the seven cases there were excellent results and the conditions in each as regards defective and local suffering were almost all that could be desired; moreover, there is more or less hope of permanent immunity from the disease. The author has not yet attempted removal of cancer when it was situated above the finger's reach, nor has he advised in the male removal when the anterior wall of the rectum was involved, for he feared injury of the urethra, prostate, or bladder. The following are points of importance and interest in the operation itself:

With the patient placed in the lithotomy position, access to the disease may be obtained in their subjects by widely expanding the sphincter by means of a modified Weiss' three-branched dilater, but in stout persons a full view of the interior of the rectum can only be gained by a free and extensive incision down to the coccyx. With the disease in sight, an outline incision with the knife may be made to encircle it well outside its margin and the removal may be completed with scissors, care being taken to remove a considerable margin of healthy tissue. It is usually easy to control hæmorrhage. In some cases it was possible to suture the edges of the mucus membrane together but it is a matter of small importance. In the majority of cases, the wound was left open, care being taken to keep it cleansed with iodoform and well drained by means of celluloid drainage tubes. The author attributes much of the success of the operation to thorough cleansing of the wound. The rectum is washed out with an antiseptic solution every eight hours, and is followed by the introduction of an iodoform suppository. It was never found to be necessary to open the colon before doing proctectomy, but he thinks it might sometimes be advisable. He recommends the operation if the disease is situated within easy reach of the finger on the posterior or lateral walls of the rectum or even on the anterior wall provided it has not involved the outer muscular wall of the rectum.

We will now proceed to consider the record of the operative measures, namely, colotomy. Of 102 patients seen by the author, 17 died of obstruction unrelieved by operation, and 15 others similarly obstructed underwent the operation. So, if left to nature, 31.4 per cent. of all cases of cancer of the rectum would die from obstruction. Of the remaining 70, 3 died from hæmorrhage, 5 from acute septicæmia, 2 from implication of other organs; in 9 colotomy was done in the absence of complete obstruction for the relief of the local distress, and in the remaining 51—exactly half the number—death is attributed to exhaustion. We are a little surprised, at first sight, to see that not one-third died from complete obstruction—of course, in nearly every case at some period of its disease there is some obstruction, but it can usually be got over by the use of laxatives, injections, the introduction of the finger, bougies, etc. In not one of the thirty-one cases imperatively demanding operation was the disease in easy reach of the finger, and in the majority it was quite beyond the touch. The reasons for this difference in the effect of cancer as a cause of occlusion, are doubtless to be found in the anatomical relations of the upper and lower portions of the rectum. If then we have to deal with a case of cancer situated in the upper movable part of the rectum, knowing that complete obstruction may of a certainty be worked for, it is desirable that an opening be made in the colon at least as soon as the first symptoms of obstruction appear, and in time to anticipate those further changes upon which the mortality of colotomy so depends. In these circumstances the ordinary left lumbar colotomy is to be preferred, not only because the bowel is more easily reached, but also because the opening is made at a sufficient distance from the disease to ensure its being found in a healthy state. That early operation is called for, is shown by the mortality of the cases above referred to. Of the 15 operated on for complete obstruction, 5 died within the first week, 2 within three months, and the remaining 8 lived an average of rather more than one year. On the other hand, of the 9 operated on with no symptoms of obstruction, the earliest death did not take place for upwards of two months, and the average of life throughout was a little over eleven months. Statistics of 54 other cases taken from his books show the same thing, and, therefore, he recommends without delay the formation of an artificial anus when cancer has been diagnosed high up in the rectum. The propriety of recommending colotomy in cases of cancer of the middle and lower portion of the rectum to which excision is deemed inapplicable, depends on two questions—is the life of the patient prolonged? are his remaining days made more tolerable? To answer these questions, the author examined the histories of 86 cases, of whom 52 ran their course without operation, and 34 submitted to left lumbar colotomy. The average duration of life of cases not operated on, reckoned from the date of the earliest symptoms, was a little over seventeen months; whilst that of the 34, who submitted to operation, was twenty two and a half months. It is probably fair to assume that the patients who consented to operation were suffering more severely, as a rule, than those who declined, and, therefore, probably their duration of life would have been even shorter than the latter.

Now, as to the relief from pain and physical improvement which an operation brings in cases where there is no material obstruction, but great distress and worry. The amount of relief is to be measured by the extent to which suffering depends upon the presence of fæces and their passage over the diseased surface. Complete relief is never obtained. A variable amount of distress is inseparable from the condition itself. However real the actual relief, it is never complete; and there is still the prescience of a lingering death. The conclusions which the author has known are that by colotomy the continuous pain is lessened in scarcity, the desire to evacuate disappears in some, and is dimished in others, incontinence of fæces is usually absent, and the motions are discharged with comparative ease and reduced to, at most, two or three in twenty-four hours.

Finally, as to the best kind of artificial anus. Until recently, left lumbar colotomy practically held the field, but within the last two years Mr. Allingham, Jr., has given impetus to inguinal colotomy. Sometimes in performing his 103 left lumbar colotomies, the author has found some difficulties, but they have never been insurmountable. In stout subjects the bowel is sometimes found in front of the anatomical line, and in the thin and wasted, it may have dropped down beside the spine. Sometimes it is necessary to open the peritoneum, sometimes it is done accidentally; but he has never had any trouble to ensue. He is not dissatisfied with the operation because of its difficulties and dangers, or its high mortality when undertaken for the relief of complete obstruction, but because of its failure in a number of instances to completely divert the fæces, and of the tendency either to gradual stenosis or even closure of the opening, or of unmanageable prolapse. It is claimed that inguinal colotomy overcomes these troubles, and, if so, the chief drawbacks to colotomy have been removed. Lumbar colotomy will continue to be preferred when the disease is very high up, and when relief of obstruction is imperative on account of the great distension. The author has had good results in one case of colectomy in which lumbar colotomy had failed to divert the fæces, but it yet remains to be seen if this operation be justifiable as a primary procedure.

DISCUSSION.

Mr. Marsh advocated a preliminary colotomy or colectomy in all cases in which proctectomy was undertaken, and he gave the history of a case he had treated in this manner. Mr. W. Mitchell Banks thought an artificial anus in the inguinal region as troublesome as in the lumbar region, and he considered that the real point in deciding between the two laid in the difficulty of the performance of the operation. He has sometimes had difficulty in finding the bowel, and advises that the bowel always be inflated with air by means of a Higginson's syringe. He thinks the bowel should always be cut clean across, instead of stitching the lateral orifice to the wound made into the lateral surface of the gut. He also advised colectomy as a preliminary to proctectomy. He protested against the too indiscriminate use of colotomy.

Mr. W. Harrison Cripps had treated seventy cases by operation and he considered that the question of colotomy only arose when excision was impracticable. As to the treatment by excision the following points require consideration: 1, class of cases suitable for operation; 2, immediate risk to life involved; 3, the amount of benefit to be expected; 4, the best method of operating. He thinks cases suitable for excision are remarkably rare and do not amount to more than fifteen or twenty per cent. If the constitutional conditions are favorable we examine to find out whether it is practicable to remove all the diseased tissue. If the ischio-rectal fossal or the lower half of the vaginal wall be invaded we may still succeed in removing all the diseased tissue; but no operation should be attempted if the uterus, bladder, prostate, or upper half of the vaginal wall be involved. The finger can detect whether the disease has involved the tissues surrounding the rectum. As to the risk to life involved in the operation, it is hard to make a correct estimate. Kelsey gives a death-rate of sixteen per cent. in 140 cases; death in many cases being due to cellulitis or peritonitis. The author thinks these complications are increased by pulling down the rectum and stitching it to the skin, and he thinks the death-rate may be decreased by a more careful selection of cases and greater care in after treatment. His mortality in thirty operations was seven per cent. He believes that from ten to fifteen per cent. of cases operated on for rectal cancer will be cured, and even if not cured many have their lives prolonged and made much more comfortable. His method of operating is as follows: He introduces a curved sharp bistoury into the rectum, and transfixes all the tissuse posteriorly down to a level with the coccyx and then cuts through all the intervening tissue. The incision is made as nearly as possible in the median line. A crescentic incision is now made extending from the margin of the first cut to a point in the middle line in front extending well into the fat in the ischio-rectal fossal and leaving a rim of mucous membrane at the anal margin if that part be not diseased. The forefinger is now thrust into the wound and the rectum detached from the surrounding tissues, but the insertion of the levator ani will have to be divided with scissors. The opposite side is treated in the same manner and all the bleeding points should now be secured. The anterior wall should be carefully separated by dissection, which is much facilitated by having a full-sized sound in the bladder. When the dissection is carried well above the disease, the rectum is pulled down by Volsellum forceps and cut off with strongly-curved scissors, bleeding points being secured as the vessels are divided. Sometimes the peritoneum will be opened, but this accident did not prove fatal in any one of four cases of his in which it occurred. The wound is kept clean and dry, and he especially guards against contraction, which generally occurs about the third week.

Treatment by Colotomy.—This is best considered under two heads: 1, the advantage of the operation; 2, the method of performing it. The question of colotomy only arises when excision is impracticable. The advantages lie partly in the relief it affords the symptoms, partly in its influence on the growth of the cancer. In the great majority of cases stricture of the bowel with its characteristic symptoms is produced—at first constipation and then a condition called by the patient diarrhœa, when there are frequent calls to stools and a passing of a mucoid discharge stained with blood and fæcal coloring matter. The trouble increases as time advances, and finally death may be produced by total obstruction. Colotomy relieves all these symptoms and is a constant safety valve. He has no doubt of the benefit of the operation in relieving distress, and he thinks it renders the progress of the disease decidedly slower. He advises colotomy as soon as the symptoms of stricture arise. The danger of the operation is vastly increased by delay. In forty operations (fourteen lumbar and twenty-six inguinal colotomies) he only had one death. Of the two operations he considers inguinal much preferable to lumbar colotomy for the following reasons: 1, the operator has more room and there can be a clean cut avoided by the extensive laceration of the subperitoneal fat; 2, it is far easier to identify the bowel from in front; 3, in the fat or muscular patient the bowel can be secured to the skin much more easily; 4, if the bowel takes an abnormal course it will scarcely affect the operation. The chief objection to inguinal colotomy is that it is unsuitable in urgent cases of complete obstruction, but he doubts if this be be a valid objection, for he has opened the bowel under such circumstances without waiting for its adhesion to the edges of the wound. In performing inguinal colotomy he makes the centre of his incision a little above a line drawn from the anterior superior iliac spine to the umbilicus, and crosses this line at right angles two inches from the spine. To avoid prolapse he pulls down as much bowel as will come from the upper angle of the wound and passes it in at the lower before fixing a portion to the skin. Mr. Herbert Allingham divides malignant disease of the rectum into three states: 1, the small annular growth freely movable; 2, a large crater-like mass into which the fæces pass, causing pain; 3, a rapidly-spreading, ulcerative form of cancer. The first of these is the only condition in which excision should be attempted, and only then when the upper limit of the disease can be felt. The headings 2 and 3 are the conditions in which colotomy is indicated, for the sufferings are thereby lessened, the diarrhœa stopped, and the growth of the disease restrained. He much prefers inguinal to lumbar colotomy, but lays stress on the necessity of making a good span.

Dr. J. Ward Cousins considers extension of life for twelve months by colotomy in cancer of the rectum a success. He likes inguinal better than lumbar colotomy and claims the former to be the easier operation, but considers the latter safer in stricture with a great deal of tympanites.

Mr. Vincent Jackson objected to the term "inguinal colotomy," and thought "iliac colotomy" the more correct term. He thinks the atresia ani which follows proctectomy should almost invalidate the employment of this operation. Lumbar colotomy should be preferred in acute obstruction, but otherwise iliac colotomy was commended.

Mr. Bennett May's experience is that colotomy is generally put off too long. He considers the inguinal operation the same and more certain when the colon is empty and retracted and the patient fat; on the other hand moderate distension facilitates the lumbar operation, and therefore the two operations are rather complemental. In other respects he thinks there is little to choose between them, but he finds excessive contraction or prolapse more common in inguinal colotomy. A moderate prolapse is a decided advantage, for it forms a good space and promotes the passage of fæces beyond the opening. It depends on the length of the mesentery, and also on the size of the opening into the bowel and parietal peritoneum. He admits the performance of the inguinal operation at one sitting.

Mr. F. Bowreman Jessett thought there were few cases of cancer of the rectum in which incision was advisable. He would in all cases do a preliminary colotomy. He was pleased to see that inguinal colotomy met with favor. To avoid prolapse he draws the sigmoid flexure well out and divides the gut, and after well invaginating the lower end into itself, and suturing it he drops it back into the peritoneal cavity and sews the proximal end to the wound.

Mr. Rushton Parker agreed that cases for excision should be carefully selected. His two cases had made good recoveries, and were still well at the end of two and a half years. He thought that excision should not be necessarily limited to cases where the lower rectum was involved. By removing the coccyx and lower vertebræ of the sacrum, he had divided the bowel as high as twelve inches above the anus and this operation had been extensively done in Germany. By opening the peritoneum and dividing the lateral attachments, the bowel could be drawn down and the disease removed even when high up. The best way to avoid colotomy was by carefully dieting the patient and attending to the state of the bowels.

Dr. J. Inglis Parsons asked some of those present to try his method of treating cancer with a powerful interrupted voltaic current. One of his patients has remained well for a year since treatment.

Professor Trendelenburg, of Bonn, called attention to the resection of the coccyx and lower part of the sacrum, and the possibility in this way of resecting the rectum and leaving the lower part untouched.

Mr. A. F. McGill had in three cases substituted colectomy for colotomy, in order to prevent the passage of fæces by the artificial anus. In two of the cases death had resulted from peritonitis, which had been set up by a gangrenous condition of the rectum, caused by the fæces which could not escape; therefore he thinks the upper end of the lower portion of the gut should be left open.

Mr. R. Lawbow Knaggs and Mr. T. Sympson also made remarks.

THE THERAPEUTICS OF RHEUMATISM IN INFANTS AND CHILDREN.

By Dr. A. Jacobi. Read before the Medical Society of the County of New York. From the *N. Y. Medical Journal.*

Dr. Jacobi opened by calling attention to the frequency of rheumatism in infants and children. Valvular diseases of the left heart are generally due to rheumatism, and not to scarlatina, and often it is the first symptom. The slightest symptoms of chorea minor should lead to an examination of both heart and joints. Cases of rheumatism in children were too often diagnosed as "dentition," "malaria," "worms" or "colds"; this being due partly to the difficulty of diagnosis, and partly to the common idea among practitioners that they are of rare occurrence. Fever in rheumatism might be slight and irregular, and moreover it is a common symptom due to slight distension. Swelling of the joints is apt to be trifling in amount and easily overlooked; and the pain might be much less than pain due to fatigue, rickets, syphilis, etc. The heart and joints should always be examined when the child shows discomfort, and the diagnosis is obscure. Diagnosis is especially hard when only a single joint is affected. Only too often is the pain called "growing pains," and in the majority of cases the "growing pains" indicate the presence of rheumatism, and the liability to irreparable heart injuries.

As regards treatment, a change of residence from localities in which rheumatism is apparently epidemic is often desirable. Alkalies are often indicated. The systematic use of cold water often modifies, sometimes removes, the tendency to rheumatism of children born of rheumatic parents. A cold wash, sponge, wet sheet, shower-bath, or bath (according to the child's strength or power of reaction) should be given daily. Then warm clothing should be worn the rest of the day. As local measures he advised swathing the swollen and painful joint in cotton and flannel, or the application twice a day of a solution of iodoform in collodion. For endocarditis he recommends absolute rest, cold applications over the heart, and salicylate of sodium. The best preventive for muscular rheumatism, when a tendency to the affection had appeared, is the regular and systematic use of cold water. When real inflammation is present in the muscle, a mild continued current, and small doses of bichloride of mercury do good.

Dr. W. H. Thomson said that his attention had been called to the etiology of rheumatism years ago, and that he had heard that it was common among the Arabs of the desert as among the fishermen of Norway and Scotland. He had sought the reason why it should appear under exactly opposite conditions of soil and climate, and he was convinced that the cause must be a common one, namely, chilling of the skin when moist. This could happen equally well in either extreme. He emphazised the importance of examining the pulse, and then the joint alone, in making the diagnosis. He was inclined to believe in the existence of some yet unknown function of the skin connected with the respiration in the widest sense; and he thought failure of skin-action of some sort was a means of causing the accumulation in the body of matters which were morbific of rheumatism. A chilling of the skin was usually present in the genesis of rheumatism, so the warm bath naturally acts as an anaesthetic as well as rendering urine alkaline. Flannel and oily inunction—especially with cod-liver oil—were useful. He agreed with Dr. Jacobi as to the liability of endocarditis and has seen it develop when the joint trouble was very slight. To prevent this injury we must be on the lookout for the first symptons of rheumatism and especially for chorea. He dreaded " growing pains " and always immediately put the child on cod-liver oil, and advised the use of flannel, etc. He believed salicylic acid only useful for the joint troubles and not for endocarditis; for the latter he prefers antipyrine or phenacetine. He thought the reason why the heart lesions were so much more apt to remain permanent than the joint trouble, laid in the fact that the heart was in constant motion and could not be given entire rest as a joint can, and since the heart-beat is more rapid in children than in adults, therefore heart lesions are more apt to be developed. For this reason he advises aconite and not digitalis. Alkalies are also to be given and the skin well-protected, especially that of the chest.

Dr. J. Lewis Smith said he had kept a record of all cases of rheumatism in children under fifteen years of age which he had met with in the outdoor department at Bellevue.

In 78 there had been a cardiac bruit, and in only one case had the patient been under one year old, and very few under two. In three cases in young children there had been very little swelling, but some tenderness in the joints. Generally the disease began in the lower extremities, and tended to travel upward. The local manifestations were much less than in adults. He had often found a cardiac bruit in cases which gave the history of former " growing pains," and he thought the laity should be taught the danger that laid behind "growing pains." The heart generally becomes enlarged after the disease has lasted about a year. He agreed with Dr. Jacobi that rheumatism was often the underlying cause of chorea minor, and in 165 cases of the latter he had found 18 due to the former. He found salicylate of sodium of great value if given early, and he also packed it around the affected joints.

Dr. H. D. Chapin thought the diagnosis difficult, though we now know it is a common disease in children. We must take in the whole picture, and not depend on individual symptoms. Pain around the joints may be due to many causes, and is especially common from over-exertion; when due to this cause it is usually present in the evening, while the soreness due to rheumatism is more common in the morning. Heredity should be given much weight. Wandering pains, endocarditis, hydæmia and chorea are manifestations of one and the same condition. He thinks we do not insist enough on a long-continued rest in children with endocarditis. In 15 or 20 cases out of 60 he had found tonsillitis either before or after the attack of rheumatism. The causes of rheumatism are acidity of the stomach and bowels, derangement of the hepatic function, and a checking of the action of the skin. Hot alkaline baths, a careful diet, and iron internally would often prevent the recurrence of the attack.

Dr. A. Seibert thought rheumatism in children due to infection quite as much as heredity. He had seen it develop in young children whose parents had never suffered from it, but were attacked some time after the children had it. This happened in people who lived in damp and dirty dwellings. Its infectious origin explains the development of the endocarditis before chorea in the joint trouble. He placed it in the same category with fibrous pneumonia, meningitis and diphtheria; and it was most frequent in the same houses as the latter. He did not believe mere chilling of the surface could cause all the manifestations of rheumatism, and, moreover, children were not exposed to cold and wet weather.

Dr. J. C. Peters replied to this that the dwellings of the poor were often cold and damp, the mothers careless about the children's underwear, and he had often been obliged to order better underclothes. He had found lithia (as distinguished from lithia water) of considerable value in treatment.

Dr. A. Caillé took much the same view as Dr. Seibert, and believed the disease to be infectious.

BAKING POWDERS. From an editorial in the *Medical and Surgical Reporter.*

In order to settle the question as to the relative wholesomeness of the different baking powders, there has been an investigation under the direction of the Department of Agriculture of the United States. The analysis of a large number of samples of various baking powders leads to conclusions that they are not apt to injure the health of our people. Moreover, the analysis shows that the chemicals are not all expelled in the process of cooking.

The great test of excellence is that the powder should contain the minimum alkaline residue and the maximum quantity of available carbonic acid. The investigation shows that even the best tartrate powders leave a residue in one loaf of bread of more than 50 per cent. in excess of the quantity of an ordinary seidlitz powder, and that it was of the same character as seidlitz powder. Probably the amount in each person's portion of the loaf would do no harm. Therefore, we may conclude that, if prepared with a reasonable amount of care, they are perfectly safe to use.

DEPOPULATION OF FRANCE.

The movement of population in France, as indicated by the summaries published for 1888 in the *Journal Officiel*, cannot be read without regret. There is diminution of marriages, augmentation of divorces, decrease of legitimate births, increase of illegitimate births, excess of deaths over births in forty-four departments. In 1888 there were 276,848 marriages—6,360 less than in 1883, and 8,719 less than in the period 1847–1860. The number of divorces was 4,708—1,072 more than in 1887, and 1,758 more than in 1886. The number of births was 882,639—16,749 less than in 1887, 41,919 than in 1886, 42,000 than in 1885, and 55,119 than in 1884. The proportion of illegitimate births was 8.5 per cent., as compared with 7.5 per cent. in 1882. But for the afflux of illegitimate births, "the French population," says the official report, "would decrease."—*From the British Medical Journal.*

STATISTICS OF SUICIDE IN FRANCE.

The Paris correspondent of the *Medical Press* writes that in the last sixteen years the number of suicides in France has increased 55 per cent.; during that period the proportion to the population has risen from 15 to 21 per 100,000 inhabitants. In 1872 the number of suicides was 5,275; in 1887, 8,202. The proportion of women to men was 1,758 (22 per cent.), against 6,434 (78 per cent). The frequency increased with age. Two thousand eight hundred and ninety-four were unmarried, 3,706 married, and 1,355 widows or widowers; 2,614 were in agricultural pursuits; 2,276 belonged to various industries, while the remainder were in business; 4,279 were in the rural districts, 3,807 in the urban. As to the period of the year, Summer and Spring furnished the largest number.

The means employed were in the following frequency: strangling, immersion, firearms, asphyxia by charcoal, sharp instruments, poison, precipitation from heights. The presumed causes were: insanity, 2,023; physical suffering, 1,407; poverty and reverse of fortune, 1,059; domestic affliction, 1,116; drunkenness, 914; disappointed affections, 305, etc.

In the above list, alcoholism, producing cerebral affections, takes the first rank. During the last fifty years the consumption of alcohol has increased three-fold, and the number of insane persons four-fold. The liquor which contributes most to producing mental derangement is absinthe.—*From the Medical and Surgical Reporter.*

THE INDUCTION OF PREMATURE LABOR IN THE BRIGHT'S DISEASE OF PREGNANCY. By James Tyson, M.D. From *The Journal of the American Medical Association.*

The author recommends the induction of premature labor with a view of saving the life of the patient, first, in cases of Bright's disease complicating pregnancy, when in a previous pregnancy there has been puerperal nephritis with grave symptoms. As an illustration, the history of a case which came under his observation is given. In her second pregnancy, in 1884, she developed albuminuria and amaurosis, and finally miscarried at eight months with a dead fœtus. She did well for two or three days, but then bad symptoms set in and she suddenly developed paralysis of the right side with loss of speech. From this time she gradually improved, and a year later her urine was normal, though there was still difficulty in talking and walking. In 1888 she again conceived and up to the seventh month was free from any signs of nephritis. She then began to develop symptoms of nephritis, and a month later there was numerous hyaline casts and much albumen. At the beginning of the eight month, while apparently as well as usual, she fell into a convulsion from which she died the same evening. The author had advised putting off interference until more actively dangerous symptoms presented themselves, but when they came they left no time for interference. He thinks the induction of premature labor would probably have saved her life.

Second. The author advises the induction of premature labor with a view of saving the life of the patient in all primiparæ in whom there is Bright's disease previous to pregnancy. He has seen so many deaths at the first confinement in such cases that if he has the opportunity he always discourages marriage in the strongest terms. Should a woman thus afflicted marry, she should never be allowed to go to full terms but labor should be induced as soon as the fœtus is viable.

Third. There only remains to be considered those cases of nephritis in which we have not the knowledge gained by experience with a previous occurrence of the disease in the same patient, and those which are not primiparæ, having Bright's disease previous to marriage. They include, therefore, acquired puerperal nephritis in primiparæ, acquired puerperal nephritis in multiparæ present for the first time, and acquired puerperal nephritis in multiparæ when a previous labor has been accomplished without serious results. In these cases it is most difficult to decide as to the treatment. Each case must be decided on its own merits. One fact in the natural history of these cases must be emphasized, and that is the frequency of abortion, and the fact that the patient in such cases is generally sound, but the child is not so often as fortunate. As a rule we may say that marked uræmic symptoms demand immediate interference (but very great care should be observed less we make a false diagnosis); also other symptoms of Bright's disease, such as interference with important and necessary functions. As a rule, the same symptoms are more serious in robust women than in the delicate and less hardy. Acquired Bright's disease in the first pregnancy is more serious than in multiparæ.

INFANTILE OPHTHALMIA AND ITS PREVENTION. By Karl Grossman, M.D. From *British Medical Journal.*

The author remarked that this was no new subject and that he expected little opposition to his remarks and conclusions. The efforts of modern therapeutics are directed pre-eminently towards prevention rather than towards cure. If some have gone too far in attributing almost every complaint to some germ or other, we have gained the knowledge that one of the most important laws of treatment is the most scrupulous cleanliness. This law is the great principle which has led to such astonishing success in recent surgery, and in medicine it has given the impulse to the rapid development of hygiene. Even in ophthalmology, where we have for a long time had results unparalleled in general surgery; we hope all have adopted the antiseptic *régime*, modified, of course, to our special requirements. Is it not time to stamp out a disease which causes the blindness of about one-third of all the inmates of our blind asylums, when that disease not only can be completely cured, if seen in time, but can also easily be prevented entirely? Whether infantile blenorrhœa be due or not to the "gonococcus" or "diplococcus pyogenes," the fact remains that it admits of a cure. Evidently, the cornea of a child is better supplied with nutrition than that of an adult, nor is there the same danger of chemosis.

The author has tried different remedies—nitrate of silver, corrosive sublimate, liquor chlori, iodoform, sulphate of copper, carbolic acid, peroxide of hydrogen—and they have all given good results. He has used all these remedies to know that there is no one specific and they all answered admirably though he has chiefly relied on nitrate of silver and recently β-napthol. The great difficulty is that the little patients are brought to us too late. Dr. Credé, of Leipzig, has shown us where the root of this disease lies and how we can get at it and he pointed out that it was far more in the power of the obstetrician than opthalmologist to prevent it. His method, slightly modified, is to wash the child as soon as the cord is attended to, wipe the closed eyes with a clean-rag and then to open them and drop in to each one drop of a 2 per cent. solution of nitrate of silver. By these means, Credé reduced the percentage from 13.6 to less than 0.5. The only objection to his method is that the 2 per cent. solution is rather too strong but the weaker solutions do equally well down to 0.5 per cent. The author has never seen any permanent injury result from the use of even the 2 per cent. solution. In many of the large continental obstrical institutions the percentage has come down to almost nothing from 9 or even 13 per cent., *e. q.* Berlin Chaisté in 1883 had 1.5 per cent. out of 460 cases and 0.0. per cent. out of 260 cases, in 1876—1880 from 13 to 9; Bonn, 0.5 per cent.; Dresden, 0.4 per cent. in 1,000 cases and 0.0. per cent. in 420; Griersen, 0.0. per cent. out of 330 cases; Marburg, 0.6 per cent. out of 943 cases. These statistics speak plainly enough.

The author recommends the following reformatory suggestions:

1. Each midwife should be instructed during her apprenticeship about the symptoms and treatment of infantile opthalmia. This ought to be notified on her certificate.

2. Every new-born child ought to be subjected to the preventive instillation of a weak solution of nitrate of silver or other suitable solution. The midwife ought to be compelled to do this in every case.

3. In every case when the signs of inflammation of the eyes occur from the third day to the end of the confinement, the midwife should be compelled to give notice to a medical man.

4. In case the midwife omits any of these points, her certificate should be withdrawn and a fine imposed.

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CLINICAL RECORDS.

REPORT OF A CASE OF TETANUS. By J. W. Hamer, M. D.

On August 13, 1888, at 1.30 A.M., I was called in haste to see John L., aged 7, a stout, hearty-looking lad. I was informed by the messenger that he thought it a case of muscular cramps, and I accordingly took drugs that I could use. On examination of the patient I found the muscles rigid and the jaws partially contracted. At the outer portion of the left leg there was a punctured wound, from the boy having fallen against the point of a sharp stick.

The wound which occurred nine days before the present symptoms, was discharging some, but presented no pain or redness, and had a healthy appearance. The patient had neither pain before my call nor during the manipulations employed. The pain experienced at my visit was paroxysmal and the muscles were then most rigid. On the appearance of a paroxysm it started in the foot of the injured leg, and the pain was more severe in injured leg and along spinal column than in the other parts of the body. The left foot was inverted and extended. My treatment consisted in the use of bromide potassium in fifteen grain doses every two hours preceded by a hypodermic injection, one-twelfth of a grain of sulphate of morphine. After a short rest the paroxysms again made their appearance, together with severe pain. The muscles were so rigid, that, if the patient were in a reclining position, the opisthotonos would continue for a few minutes, followed by a period of rest, during which the patient would sleep, perspiring most profusely. One-twelfth of a grain of sulphate of morphine was again given hypodermically. At midnight another injection of morphine was given and the dose of the bromide was increased to twenty grains, to be given every two honrs.

On August 14th, at 8.30 A. M., Dr. F. Schill saw the case with me. We found the patient resting badly, the pulse 132, but were unable, on account of the violent nature of the paroxysms, to obtain the temperature. A hypodermic injection of one-eighth of a grain of sulphate of morphine and one two-hundreth of a grain of sulphate atropine was given, and in addition to the bromide we added chloral hydrate in ten-grain doses and the fluid extract of digitalis in minim doses.

At 6 P. M. I observed the muscles of the upper extremities to be increased in rigidity, the pulse to be soft, full, and regular at 120.

August 15th, 10 A. M., pulse 120; temperature 101°; skin hot and dry to the touch. As the patient refused to take the mixture of bromide, chloral, and digitalis, the bromide of potassium and fluid extract of jasmine were substituted.

At 6.30 P. M. I found patient in the same condition as at morning visit, but he refused medicine. Being unable to procure calabar bean, I exhibited the tincture of lobelia, a teaspoonful every two hours.

August 16th, 2 A. M., summoned in haste. I observed the abdominal muscles rigid and twitching on manipulation.

The muscles of the lower extremities were sufficiently relaxed that he could sit on a chair his feet pendant.

10 A. M. On awakening had several paroxysms. the first since 2 A. M. , which were probably due to the irregular giving of the medicine after relaxation.

9 P. M. The patient's condition more unfavorable than at any time previous, deglutition being impossible.

As both the boy and his parents objected to the hypodermic method of medication, I gave an enema of warm water with lobelia and morphine, after which inhalations of chloroform were given.

11 P. M. Dr. A. N. Wakefield was called in, and as the patient was sinking rapidly, and in tonic spasms, a hypodermic injection of sulphate of morphine and sulphate of atropine was given.

He died about two hours later.

The drugs that seemed to have the most beneficial effect in this case were morphine and the tincture of lobelia. I failed to produce any effect with the other remedies.—*Medical Bulletin.*

CLINICAL NOTES ON THE USE OF CAMPHO-PHENIQUE IN THE TREATMENT OF BURNS AND LACERATED AND CONTUSED WOUNDS.

It is now some five or six years since my attention was first called, by a brother practitioner, to the remarkable preparation which has since become so widely and favorably known to surgeons as "Campho-phenique." It was then in an experimental state, and was undergoing a series of practical and scientific tests with the view of the determination of its properties—physical, physiological and therapeutic.

Being in daily contact with those who were conducting the experiments, I soon acquired an appreciation of the value of the subject as a vulnerary local anæsthetic and antiseptic, which the experience of subsequent years, and its use in many hundreds of cases, has served only to exalt and intensify. The results achieved with its aid in many classes of surgical lesions have been uniformly satisfactory and, in some instances, so remarkably excellent as to justify an endorsement of the remedy, which, to those who are unacquainted with it, would seem like the grossest exaggeration.

The rapidity and freedom from inflammation and suppuration with which ordinary incised wounds unite under its use are remarkable ; but it is in badly lacerated and contused wounds and burns of all descriptions that its greatest virtues are exhibited, and it is to the results achieved in this latter class that my foregoing remarks concerning exaggeration especially apply. As a proof of the truth of the statement, I present herewith a brief clinical report of a typical case of each description treated with campho-phenique alone.

Case I.—Amy B., white, æt. 4 years. In reaching for a plaything on a lamp stand, the cover of the latter was pulled off and a lighted night-lamp standing thereon was overturned, a portion of its contents (coal oil) being thrown over the hands and arms of the child. The latter fell to the floor amid the debris, and in a moment, or before the parents, both of whom were in the room, could smother the flame, was superficially but badly burned from the finger tips to above the elbow of the left hand and arm and over a space three inches in diameter on the right shoulder. There were also a few blisters made on the feet. I was called, saw the little patient in a very few minutes after the occurence, and found her screaming and writhing in agony, notwithstanding the application of cold cloths, etc. There being no sweet oil or vaseline in the house, the idea of mixing campho-phenique with a little jug of cream which stood on the table suggested itself to me, and I at once applied to the entire wounded surface a mixture of one part of campho-phenique and two parts of cream. Within five minutes the patient became quiet and soon fell asleep. Directing the parents to make subsequent dressings with a mixture of olive oil (two parts) and campho-phenique (one part) I left the house. Without going further into details, I will say, that within four days the greater portion of the burned surface was healed, and at the end of a week was entirely well. The patient never at any time, subsequent to the first dressing, complained of pain.

Case II.—M. G., white, American, æt. 32, in attempting to get off a moving street car was thrown forward, falling at full length and striking the crown of the head against the granite curbing, making several contused and lacerated scalp wounds, two of which were upwards of an inch and a half in length each, and cut entirely through the integument, exposing the periosteum. He was carried into a neighboring drug store, where I found him a few minutes later, considerably dazed and covered with blood. After the usual preliminaries, cleansing the wounds and drying them as thoroughly as possible with absorbent cotton, I poured campho-phenique pure into and around the lesions which, all together, covered a space as large as the palm. The momentary smarting was followed by local anæsthesia, which allowed me to take a number of stitches without causing enough pain to elicit even a grunt. I would mention here, parenthetically, that this is one of the most valuable features of the remedy, as many persons who can stand the pain of a cut or other wound very well, seem to suffer acutely from the manipulations of suturing. I would also state that it is my habit to pass the needle and suture through campho-phenique immediately before using. Not a few local surgeons keep their needles and sutures constantly in the liquid. I have seen needles that have reposed in a vial of it for upwards of four years retain their polish perfectly. The dressing was completed in the usual way and the patient told to call at my office the second day thereafter. He did so, and to my surprise, although I had had considerable experience with the dressing, I found not a trace of suppuration and but little show of inflammation The scalp was freed from dried blood and dessicated exudations and an application of campho-phenique and vaseline in equal parts made to the injured surface, the dressing being completed by covering the part with a bit of lint smeared with the vaseline and held in place by the large silk handkerchief tied over the head. On the fourth day the sutures were removed, every portion of the wounds being united by first intention. I saw the patient but once afterwards just one week from the date of the injury and then found the wounds entirely healed. Not a drop of pus had formed and the patient assured me that "except for the nuisance of having to keep something on his head all the time, he would scarcely have known that he had a hurt there."

Campho-phenique consists of phenic acid and refined camphor in nearly equal parts (505 parts of the former to 495 parts of the latter in 1000) chemically combined, and differs essentially from the solution formed by mixing carbolic acid and camphor, and which is sometimes substituted therefor. This substitution, when attempted, is quickly discovered by the patient if not by the surgeon, by the production of sensations which, to say the least, are the very reverse of anæsthetic.

WALDO BRIGGS, M.D.,

St. Louis, Mo., Oct. 20, 1889.

REPORT OF A CASE OF RUPTURE OF THE MALE URETHRA.* By J. D. Thomas, M. D., Professor of Genito-Urinary and Venereal Diseases, Western Pa. Med. College.

The case I beg leave to report is one of rupture of the urethra, in its fixed portion, from trauma. These cases do not occur very often, but they are of sufficient frequency to merit attention. Like cases of strangulated hernia, if not interfered with surgically early enough, they almost inevitably result in the death of the patient. The text-books lay down certain rules of conduct to be followed, but I believe that a case from actual practice is more instructive, and often brings forward difficulties that the text-books may not touch upon; and, moreover, among gentlemen of much experience, such as compose the majority of the members of this society, the discussion may bring out points of very great interest and instruction.

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* Read at Alleghany County Medical Society.

J. S., æt. 61; on April 3d, at 7 P. M., of the present year, whilst standing on a ladder with his back to the same, and in the act of stepping with one foot to the second floor of an out-building, accidentally slipped with the other foot that was upon the round of the ladder, and slid down backwards and struck with considerable momentum his perinæum upon a pick-handle that was resting against the ladder. When he struck upon the pick-handle he lunged forward, his body taking the handle with it for a moment, and then the handle projecting forwards between his thighs as he fell forward on his face. He felt considerably hurt, but he did not become faint. After resting awhile, he visited a drug-store four blocks away and purchased a lotion for application. At 10 P. M., or three hours after the accident, he made an attempt to pass his urine but failed, when he sent for me.

After getting the above history of the case I made an examination of the parts, and found the following conditions: There was already some discoloration of the perinæum, but no abrasion. On his under-drawers I found about a half-dram of blood, that had evidently come from the meatus. There was no distention of the bladder, as he had passed his water immediately before the accident. All I did at this visit was to give the patient opium, and order him to bed.

April 4th, 8 A. M. The patient made an attempt to pass his urine, but failed. I then introduced a soft catheter, which passed to five inches, and after a little delay went one inch farther. On its removal, there was a little blood in the eye. I then substituted an ordinary silver catheter, which would not pass. This also contained some blood in the eye. Both of these efforts were made with the utmost gentleness. At this visit there was some swelling and a good deal of discoloration of the perinæum and scrotum. Opium continued, and sitz baths ordered—no attempt at catheterization. 3 P. M. Visited my patient prepared to aspirate if necessary, but he had urinated whilst in the bath some time before my arrival, and percussion over the pubes showed the bladder empty. April 5th, 8:30 A. M. The patient passed four ounces of urine during the night—this urine was saved for my inspection, and it contained no blood. He passed a restless night, however, owing to pain in the perinæum and scrotum. No distention of bladder. The scrotum is very large and almost black from extravasation of blood; the penis is now also discolored. Opium, and the scrotum supported. 3 P. M. Passed urine twice since morning visit, and feels comfortable, resulting, as he thinks, from the support given to the scrotum. April 6th, 9 A. M. Passed two pints of urine, at intervals of two hours, during the night. The scrotum is immensely distended, measuring 16 inches in circumference; penis much swollen and discolored like the scrotum. Otherwise doing well. April 7th, 9 A. M. During the last twenty-four hours the patient passed a fair quantity of urine, somewhat discolored with blood. The penis is reduced in size, but scrotum the same as before. April 8th, 8 A. M. Two pints of urine passed since last visit. Patient complains sorely from the swelling in the scrotum. 11 P. M. Suffers very much from the distention of the scrotum. I passed a large aspirating needle in three or four places over the scrotum, expecting to find effused blood in the vaginal cavities, but nothing but a little bloody serum was evacuated. April 9th, 8 A. M. Passed a restless night. Some urine passed per urethram, but the discharge from the punctures made in the scrotum the day before has a urinous odor; this last fact caused me to decide at once as to the necessity of opening the urethra in the perinæum. 2:30 P. M. Operation. I attempted to pass solid instruments, in decreasing numbers, in order to have a guide, but failed. Fortunately, however, a soft instrument went passed the obstruction, and this served the purpose. After cutting down upon the guide, a very free incision was made. On the right side of the urethra quite a slough was found. A soft catheter was then introduced into the bladder through the wound, and permitted to remain. Four incisions were made into the scrotum--two on each side of the raphe. The operation lasted a little less than one hour, inclusive of anæsthesia. April 10th. Patient doing fairly well. Scrotum reduced to eleven inches in circumference. No fever. April 11th. Condition good. Evidence of a slough on the right side of the scrotum, at the seat of one of the incisions. Made two more incisions on the right side. April 12th. Doing well. During the night the catheter became clogged, interfering with the discharge of urine. I removed the catheter, a silk one, and found it covered with incrustation, and the catheter-material disintegrating. Passed a soft rubber catheter per urethram and tied it in. April 13th. In fair condition. Catheter removed, but to be introduced every three hours, to insure complete emptying of the viscus. Poultices to be applied over the slough on the scrotum. April 14th. In splendid condition. All of the wounds looking well, including the sloughing one, which is cleaning off somewhat. Scrotum reduced to nearly normal. April 15th. Doing well. April 16th. Slough almost clean. Patient says he was a little chilly during the night, but no elevation of temperature has followed, and pulse is normal. April 17th. Doing well. April 18th. Doing well. April 19th. Slough entirely clean. April 20th. Wounds all doing well. Poultices discontinued. April 21st. Doing well. April 22d. Doing well. April 23d. Doing well. April 24th. Doing well. April 25th. Doing well. Got out of bed to-day, and passed urine unaided for the first time. April 26th. Doing well. Catheter to be passed twice in twenty-four hours, as there is about three ounces of residual urine. April 28th. Everything well. April 30th. Everything well. May 2d. Everything well. May 4th. Everything well. May

6th. All wounds on scrotum healed, and patient took a walk out of doors. May 9th. Doing all right. May 20th. Wound in perinæum healed soundly.

During the entire treatment the wounds were irrigated, frequently, with a solution of mercury bicloride 1.4000. After the perinæal section, the patient did not take a dose of medicine, as all of the functions were performed normally, and there was at no time an elevation of temperatnre. A full-sized steel sound was passed every third day until the perinæal wound was perfectly healed, and occasionally afterwards. The catheter was discontinued about the time the wounds were all healed, as the patient emptied the bladder perfectly by his own efforts.

In this case I appreciated from the beginning the fact that the urethra was torn, and stood ready to open the perinæum at any time, but, as the notes show, the patient was voiding urine in sufficient quantities, and presented no dangerous symptoms. I presumed, therefore, that nature had glazed over the rent in the urethra, and that the patient would recover without a perinæal section. When I relieved the tension of the scrotum by multiple punction (for this tension, I believe, was caused by capillary effusion), the urine was permitted to pass through the rent which had evidently not become glazed over, and then it passed through the loose scrotal tissues and gave the discharge from the punctures a urinous odor; for when the punctures were made there was no urinous odor to the fluid which was evacuated. There was, however, some infiltration in the neighborhood of the rupture, as the condition of the parts demonstrated at the operation.

We had in the case not only a rupture of the urethra, but of the deep perinæal fascia (known here as Buck's fascia) as well, for the urine passed directly to the scrotum without first showing evidences of infiltration behind this fascia.

I would not advise the opening of the perinæum in all cases simply because there was a rupture of the canal; but the moment infiltration of urine is suspected, operate immediately, and afterwards pass full-sized sounds until the healing of the wound has taken place.

Although this case could not have terminated better, an earlier operation, evidently, would have been proper.—*The Pittsburgh Medical Review.*

HÆMATOMA OF THE VULVA IN THE NON-PUERPERAL STATE. With a Report of Three Cases. By Kingman B. Page, M.D., New York City.

" Hæmatoma of the vulva, ' a tumor formed by a mass of clotted blood effused into the tissue of one labium or the areolar tissue immediately surrounding the wall of the vagina.' "

—T. GAILLARD THOMAS.

All our standard text-books on midwifery mention this injury as one of the complications of labor, but the literature of the subject of its occurrence in the non-puerperal state is but scant indeed, and by many gynæcological writers of systematic treatises is totally ignored.

Authors differ widely as to the frequency of its occurrence. Thomas* states that "in an experience of thirty years I have met with but three cases," while Velpeau claims it to be as frequent in the non-puerperal as in the puerperal state. Grailey Hewitt† writes: "This is not by any means a common affection," and regards it in its relations to the puerpera. By West and Duncan‡ it is ignored. Nonat et Linas§ mention it, without giving cases, as the result of blows, falls, or as an accident of awkward coitus. Barnes|| refers to it only in its obstetrical light. Schrœder** briefly mentions the case of Von Franque's and dismisses the subject. Winckel†† writes: "Altogether, I have seen five cases in the non-gravid state."

We have here the testimony of gynæcologists of great experience, several of them being residents of the great cosmopolitan cities of New York, Paris, London and Berlin, as to the rarity of the injury, while Velpeau stands alone in his opinion.

An anatomical study of the vulva discovers a large vascular plexus situated comparatively superficially, surrounded by tissues which are also exceedingly vascular.

A slight injury to these parts readily causes an extravasation of blood, and severe violence, rupturing some of the larger veins, or even the bulbs themselves, causes an extravasation of blood in such quantities as to seriously collapse the patient. By its anatomy we can clearly see that in a rupture involving the larger veins and the bulbs there is nothing but the highly elastic and distensible tissues of the labia majora to form the sac and exert a restraining influence. This explains the extraordinary size and capacity of the hæmatoma in one of the cases I shall report.

The question will now arise: How is it that, with tissues so favorably constituted for the formation of blood extravasations, they so rarely occur?

The true explanation, I believe, will be found in the following lines, quoted from Dr. Ranney's monograph‡‡: "In the nude, erect female only the mons veneris is seen, the external genitals being hidden by the thighs."

So that the violence of falls, blows, etc., is usually received on the mons veneris or thighs, the vulva escaping, except in those cases

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* "Diseases of Women."

† "Diseases of Women." Amer. Ed.

‡ "Diseases of Women." Eng. Ed.

§ "Maladies de l'Uterus."

|| "Diseases of Women." Amer. Ed.

** "Diseases of Female Sexual Organs." Vol. X., Ziemssen's Cyclopædia.

†† "Diseases of Women." Parvin's Ed.

‡‡ "Topographical Relations of the Female Sexual Organs." A. L. Ranney, M.D. William Wood & Co., N. Y. 1883.

where the woman, taken by surprise, or as the result of careful and purposely delivered blows, receives them directly on the external genitals.

The nature of the injuries which have caused a vulvar hæmatoma are as many and varied as those which cause any other surgical lesion. Nonat et Linas cite awkward coition; Von Franque, straining at stool; Gampe, in a nurse, twenty years of age, who had lifted patients a good deal; Winckel, the result of a fall against the side of a bath-tub. In my cases, one was caused by a fall astride of the rung of a ladder; the second by a well-applied kick; the third the result of a fall against the corner of an ice-box.

The symptoms are the formation of a tense, elastic, non-fluctuating tumor in the labium, following local injury, accompanied by more or less collapse and pain.

The treatment: Cold applications, pressure, or incision and drainage.

I have been extremely fortunate in my experience with this injury, having had under my charge three cases in the past two years, two of which are of more than ordinary interest.

HÆMATOMA—RIGHT LABIUM MAJUS.

Case I.—Miss R. M., aged nineteen years, on December 18, 1887, while hanging a picture, slipped and fell astride the rung of a step-ladder. She managed to get up from this awkward position unaided, but was immediately seized with an attack of vomiting and faintness, with severe pain in the region of the groin.

I saw her about two hours after the accident, and on examination found that a tumor about the size of a hen's egg had formed in the right labium majus. Ice was at once applied, and cold applications kept up for several days. The pain at no time was very severe. Under this treatment the swelling diminished somewhat. The cold applications were discontinued, and mild counter-irritation used for a period of ten days, after which time all treatment was discontinued, and at the expiration of a month the patient reported the swelling to have totally disappeared.

HÆMATOMA COMPLICATED BY CHANCROIDAL INOCULATION.

Case II.—Miss May H., aged twenty-six years (an obstetrical virgin), on the night of 6th of November, 1888, received from her "friend," as a slight punishment for inoculating him with a chancroid, a well-applied kick on the vulva. The woman went into a state of depression almost amounting to collapse, on which her gallant "friend" immediately deserted her. She was found in this condition some hours afterward by the other inmates of the house, by whom she was dosed liberally with brandy without her true condition being understood.

A physician resident in the locality was called in, and seeing the serious condition of the patient, recommended her removal to the hospital, refusing to take charge of the case. Late in the afternoon of the next day I was requested to see the case. The patient was a finely-developed blonde, syphilitic. By this time she had recovered somewhat from the shock, but was too much "exhilarated" to give any sensible account of herself, or to admit of any extended local treatment. Ordered ice-bags to the vulva and abstention from liquor. November 8th the patient had somewhat recovered from her debauch. Complained of severe pain and throbbing in genitals. The woman was placed on a table; a thorough examination revealed a shocking condition. The whole vulva was greatly swollen, especially the left labium majus, which was swollen to the size of an orange. The nymphæ were torn, the frenum torn from the clitoris, and the clitoris itself lacerated. There had been quite a profuse hæmorrhage from these lacerations. The edges of several of the larger tears were trimmed off and united, the whole vulva freely irrigated with corrosive sublimate solution 1-2000, then covered with iodoform gauze and the ice-bag re-applied. She then passed out of my hands until December 1st, when I was again requested to take the case. As to what had been done in the meantime I have little knowledge, as Miss H. was very non-communicative, save that she had gone to the country and the "thing had burst." Professional interest was the only inducement which I had to take the case, and it rewarded me.

Examination revealed, if possible, a worse condition than before. The hæmotoma had discharged, as the patient stated, and had undoubtedly become infected (from the chancroid, which she admitted having at the time of the injury). In place of the tumor was found a large cavity, whose walls were sloughing, and formed on one side by the vagina, superiorly by the abdominal skin, externally and inferiorly by the skin and subcutaneous tissue of the thigh. The inguinal and femoral glands had suppurated, the labium of this side was totally destroyed, the right side was comparatively in good condition.

Nitric acid was, as freely as compatible with safety, applied to the sloughing tissue, constant irrigation with corrosive sublimate solution 1-3000, used for nearly a week, at the end of which time the wound looked somewhat cleaner and better. Strong nitrate of silver solution was then applied to greater parts of the sides of the wound, and iodoform dusted on. This treatment was continued for two weeks, at the end of which time the wound looked nearly healthy. Simple iodoform dressings were used with balsam of Peru, until the whole surface of the ulcer, save a part about two inches square, had healed. This surface obstinately refused to heal; resort was then had to skin grafting, and finally by this means, the ulcer was healed; at the expiration of five months from the receipt of original injury, as a result of which the patient was left minus the left labium majus and minor, and the vagina much distorted and drawn to the left.

Case III.—Mrs. Marie R., æt. 44 years, M. VI para. Mrs. R. had been hanging her wash from the fire escape, and in re-entering the room by the window, fell, with her legs wide apart, on the corner of the ice-box. She fainted, and on gaining consciousness, had a severe vomiting attack, and suffered greatly from shock. Her family much frightened by the syncope, called in the nearest physician, who happened to be an irregular. He directed cold applications, and gave a narcotic for the painful tense swelling he found in the right labium. The case remained in his charge for ten days; the tumor gradually increasing in size and becoming more painful, the patient, in the meantime, passing but little urine—twenty ounces per diem. During this time he alternated hot and cold applications.

On June 3, the tenth day of the injury, the swelling rapidly increased in size, and the pain became intense, on which he resigned the case, stating that it necessitated the services of a surgeon.

On June 4, 3 A. M., the pain during the night had been so intense that on recommendation of a relative on whom I had recently operated, I was requested to see the case. A hurried examination showed the necessity of operative procedure, as the tumor was the size of a large cocanut and tense as a drum head. I gave the patient a hypodermic of morphine to relieve the pains; by catheter obtained urine for examination, tumor interfering with micturition. Urine examined —sp. gr. 1026, no albumen, no sugar, large quantity mixed urates, reaction neutral, color deep yellowish red.

Operation at 2:30 P. M., was in presence of Dr. J. H. Forman, and one of my students, Mr. Charles S. Woodward. When the patient was placed on the table we were all surprised at the great extent of the ecchymosis. The whole abdomen from the sternum to the pubis, round to the spine and down thigh to knee on the right side, was mottled by blue, dark green and yellowish coloration, producing a most striking appearance. The tumor, as large as a cocoanut, prevented the thighs from being brought into apposition; but it was only on separating them that the size of the hæmatoma was realized. Extending from the mons veneris to the anus, and overlapping the whole left side of the vulva was a tense, elastic, non-fluctuating, exquisitely tender swelling, involving the right labium majus, and presenting the same mottled coloration so striking on the abdomen. Ether was was administered by Dr. Forman. The mons and labium were shaved, scrubbed with soap and water, washed with bichloride 1-1000, and then with iodoform ether. An incision two inches in length was made on the under side of the tumor, and twenty ounces of black clotted blood evacuated, the cavity scraped out with a Thomas' blunt curette. The extent of the cavity and its boundaries was then ascertained. The bulb of the vagina had been ruptured, and the extravasated blood was effused under the subcutaneous tissue of the mons, down the internal surface of the thigh and backward to the anus. The whole hand could be introduced without difficulty. The cavity was thoroughly irrigated with bichloride 1-2000. A drainage tube was introduced, and an iodoform dressing applied, which was covered with rubber tissue, retained in place by a **T** bandage, vagina irrigated and tamponed to cause pressure on dressing in wound. Saw Mrs. R. again the same evening. She had recovered from the ether, but had only passed two ounces of urine; ordered to drink a glass of water hourly.

June 5. Complains of pain during the night, which passed off toward morning; passed but little urine, no albumen; has a sense of constriction in chest; examined dressing; no hæmorrhage.

June 6. No pain. Moved bowels with citrate of magnesia. Quantity of urine passed in twenty-four hours about four ounces; no albumen. Has slight ether bronchitis. Pulse poor. Complains of weakness. Continued drinking cold water. No headache.

June 7. Examined wound. No hæmorrhage or suppuration. Withdrew drainage tube. Slight swelling over mons. Urine increasing in amount. No pain. Bowels moved. Bronchitis improving.

June 9. Wound healing by first intention. Swelling over mons the same. Slight induration in the perineum. Urine nearly normal in amount.

June 12. Patient sat up for a time. Wound nearly healed.

June 16, Urine normal in quantity. Bronchitis ceased. Labium still a little enlarged. Feels perfectly well.

June 20. Discharged. The vivid mottling of the abdomen still present. Patient informs me that it lasted for a period of nearly two months.

I have detailed this and the preceding case at some length for the purpose of comparison. They are worthy of it. The second case shows the result of neglect and the mutilation resulting from it, while the last case shows the results to be obtained by thorough and careful antisepsis.

My cases have been numerically too few in number to afford substantial ground for deductions as to treatment, but in any case when, after a full trial of the controlling influences of cold applications, we meet with failure, the tumor either increasing in size or not showing signs of re-absorption, as in case 3, when the tension is so great as to threaten spontaneous rupture, I believe that it is our duty to open the sac, and thus rapidly end the danger.—*Times and Register.*

LATERAL CURVATRE OF THE SPINE—HIP DISEASE. Abstract of a Clinical Lecture Delivered at the Children's Hospital, Philadelphia. By John Ashhurst, Jr., M.D., Professor of Surgery in the University of Pennsylvania.

Professor Ashhurst showed the class a case of marked lateral curvature of the spine, which was made evident by following downward the line of the spinous processes, and explained that the bodies of the verterbræ were rotated to a greater extent than appeared externally. In the present patient the spinous processes of the dorsal region curved to the right, and on the same side was to be seen a sharp projection caused by the tuberosities and angles of the ribs. In this affection two curves are always found, the one compensatory to the other, the primary curve usually being the lower, though the upper is more distinct.

The predisposing cause of lateral curvature is relaxation of the ligaments, and the exciting cause some malformation of the body, or some vicious habit of standing or sitting. For example, if one limb is shorter than the other, the pelvis will be tilted upward on one side and a curve produced in the spine. The military position of "standing at ease," with one foot forward, has the same tendency. Another cause is sitting at too high a desk, which necessitates the elevation of one shoulder.

Lateral curvature is frequently met with in young girls, but in the majority, as they advance to womanhood, it disappears or becomes too slight to be noticed. Often the first sign is observed by the mother, who will say that the child's shoulder is "growing out." On examination it is found that the scapula does project, and that there is already some deviation of the spinous processes, the principal curve usually being above and toward the right side.

Treatment in the earlier stages can usually be satisfactorily conducted by the correction of improper positions and by gymnastic exercises. When a girl is found with the scapula projecting, and some pain in the part, she should be directed to lie flat on her back for an hour each day. Desks should be made of the proper height, and children should be trained to sit before them without elevating a shoulder. If, as is not infrequently the case, children fall into the habit of "standing at ease," with one foot advanced, the habit should be broken. Patients should be made to sleep upon a firm mattress, with a single pillow under the head, but not under the shoulders. Useful gymnastic exercises are those which cause the arms to be elevated, such as swinging from a horizontal ladder, or the use of pulley weights.

When, however, the disease is further advanced an apparatus is advisable, which, for most cases, should have a pelvic support and means for reinforcing the weakened spine. In very bad cases, a plaster jacket gives better support than a brace, and has been used in the case before the class.

Professor Ashhurst then showed a case of anteroposterior curvature, or Pott's disease, in which the deformity was angular and without any lateral curvature. Pott's disease is a more serious affection than lateral curvature, as it involves the bones of the verterbral column instead of the soft structures. Usually more than one verterbra is diseased, causing a projection of several spinous processes, as was well shown in this patient.

There are certain distinctive risks and dangers in lateral curvature, of which contraction of the chest and consequent interference with respiration are the most important. Such a condition seriously complicates pneumonia or pleurisy. In its milder forms, however, lateral curvature is not a grave disease, but merely a deformity.

HIP DISEASE.

Professor Ashhurst then brought before the class a case of hip disease in the third stage, with abscess, in which he proposed to perform excision of the joint. An incision was made in the line of the muscular fibres above, curving around the back of the trochanter, and continuing below in the direction of the muscle. Such an incision exposes the joint thoroughly without unnecessary disturbance of the tissues, On passing the fingers into the wound, it was found that not only the head of the femur but the acetabulum was involved. The head of the bone was then turned out of its cavity, sawn off, and the end rounded with bone forceps, this step being of importance, as cases are recorded in which a spiculum of bone has penetrated the femoral artery or vein. During the manipulations an abscess in front opened into the wound, which necessitated thorough washing out of the cavity. A counter-opening was made in the anterior wall of the abscess, and a drainage-tube inserted through the wound. The wound was then sutured and dressed in the usual manner.

Professor Ashhurst said that excisions of the hip were less satisfactory than any other of the large excisions; not that, among children, many died from the operation, but satisfactory cicatrization was less likely to be obtained. Whether this is due to the presence of tuberculosis, or whether it is merely due to the difficulty of securing proper drainage, cannot be positively determined. Professor Ashhurst believed that tubercles were often, though not invariably, present.

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PROCEEDINGS OF SOCIETIES.

THE USE AND ABUSE OF ANTISEPTIC INJECTIONS IN OBSTETRIC PRACTICE.*

By H. J. Garrigues, M.D., Professor of Obstetrics in New York Post-Graduate School and Hospital.

1. *When to Inject.*—A vaginal injection before delivery, repeated every three hours, removes or kills enough microbes to render the canal aseptic enough for practical purposes. The vulva is disinfected separately by rubbing it with cotton soaked in the antiseptic fluid.

After delivery, the vagina should not be touched in normal cases, but only protected by the application of the antiseptic occlusion dressing.

If it has been necessary during labor to enter the uterus, or, after labor, the vagina, a vaginal or intra-uterine injection ought to be given, according to the depth to which the canal has been entered.

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* Abstract of paper read before the American Gynæcological Society, Sept. 17-19, 1889.

As a therapeutic measure, vaginal injection is used when the lochia are fetid.

Intra-uterine injection is given when the fœtus is macerated.

In puerperal diphtheria, vaginal or intra-uterine injections are used before and after cauterization with chloride of zinc, corresponding to the locality affected.

Curetting is preceded by a vaginal and followed by an intra-uterine injection.

Before opening an abscess from the vagina, this organ is syringed and swabbed, and after the injection the cavity is syringed.

In peritonitis, the uterus is once well disinfected, but after that the patient is not disturbed.

In abortions a vaginal injection is given before removal of the ovum, and an intra-uterine after its removal.

2. *What to Inject.*—The author has collected twenty-two cases of death from mercurial poisoning in obstetric practice. If in some the fatal issue was due to faults in the use of the bichloride of mercury, others are above criticism. He thinks, therefore, it should not be used for injections. Of late he has used creolin in a two per cent. solution, and is much pleased with it, except in cases where he wishes to judge of the condition of the interior of the womb by the appearance of the returning fluid.

Bichloride is absolutely contra-indicated in anæmia, abortion, kidney disease, and diarrhœa.

3. *How to Inject.*—He prefers single-current tubes to double-current tubes. Immediately after delivery, it is better to introduce it without speculum.

Great care should be taken to go in the right direction and to the proper depth, so as to be sure to wash out the cavity of the uterus and not perforate its wall.

As a hæmostatic, very hot fluid is needed, otherwise lukewarm is preferable.

For intra-uterine injections, not more than two or three pints should be used.

If the fluid ceases to return from the uterus, the can or bag of the fountain syringe should be brought down below the level of the bed, so as to reverse the current by siphonic action.

The fluid should be removed from the womb by squeezing it, and from the vagina by turning the patient on her side.

The patient ought always to be on her back during an intra-uterine injection.

Fountain syringes are safer than bulb syringes.

They ought not to be suspended more than one or two feet above the uterus.

Properly administered injections are a most valuable prophylactic and curative remedy, and not so difficult to handle but that every intelligent practitioner can use them.

DISCUSSION.

Dr. Lusk, of New York, agreed heartily with the fundamental principles set forth by Garrigues, together with the restrictions mentioned. He desired to call attention to some points regarding which he held very decided opinions.

1st. He believes all cases of puerperal septic fever, where the poison has entered through the vagina, to be due to neglect, on the part of the accoucheur, of ordinary antiseptic precautions.

2d. Cases most successfully treated by the douche are those resulting from putrid infection, from decomposing decidual shreds, blood clots, or placental fragments; these are not true cases of septicæmia.

3d. In pure septicæmia, that caused by the invasion of the system by round bacteria, the douche could only benefit at first, and could be of no use when the germs had gained access to the general system, the uterine parenchyma, the peritoneal cavity, the lymphatics of the uterus and broad ligament, etc.

When an intra-uterine douche is indicated, use it once thoroughly, then introduce an iodoform pencil, and then let the uterus alone. Do not use the douche every three hours. Do not interfere with the uterus without reason when there is localized exudation, peritonitis, etc. With repeated douching, some little of the injection fluid will remain behind each time, in spite of every care, and may readily cause symptoms of poisoning by the antiseptic used. A slight elevation of temperature, a moderately rapid pulse, are not symptoms calling for repeated douching, which if employed may do grave damage. Fetor is not necessarily an indication for the douche, for it may be, and commonly is, produced by an ordinary catarrhal endometritis. Look the patient over carefully before using the douche, and be governed more by her general condition than by any one symptom.

Do not attend infectious diseases, erysipelas, diphtheria, scarlatina, etc., and care for your confinement cases at the same time, even if you do use antiseptic precautions and vaginal douches q. 3 h., for you surely will have cases of puerperal sepsis.

Be careful in your diagnosis, and remember that other fevers, as typhoid, may very closely resemble true puerperal septicæmia.

Doléris and others have recently claimed that by the use of the curette, followed by the écouvillon (a small flue brush), and then irrigation, and then iodoform, they could get as good results as follow the ordinary washing out.

Dr. H. C. Coe, of New York, said the determination of the point of the septic infection was often by no means easy. He agreed that the douching should be limited to once or twice in nearly all cases. Creolin was a reliable agent; the main objection was the masking quality of its odor. He considered prophylaxis most important, but did not take quite the extreme stand of Lusk.

Dr. Wm. M. Polk, of New York, employed a method somewhat different from those of Garrigues and Lusk. He treated the inside of the genital tract much as he would the skin, first cleaning off the mucous surfaces with soap and water, and then employing a 1 to 5,000 bichloride solution. In puerperal sepsis, he would treat the uterus as he would any other suppurating cavity. The patient being placed on her side, the vagina washed with soap and water, the surface of the uterine cavity is to be thoroughly cleaned with the cotton swab or the curette, then washed with the bichloride solution and dried with cotton. After this, the cavity is to be packed with iodoform or creolin gauze. This is his routine treatment after abortion, and gives him the best results; only very rarely is it necessary to repeat the procedure after forty-eight hours.

Dr. Munde said that one point not sufficiently dwelt upon was the absolute necessity of ascertaining the precise source of infection before proceeding blindly to work. In these cases, one nearly always finds blood clots, placental tissue, decidual shreds, or an inflammatory villous hyperthrophy of the placental site, etc. The uterine cavity should be thoroughly cleaned out. He believed in the curette and had long advocated its use. After the curette, use the douche once or twice, and then stop. After using the douche, he employed ergot, the cold coil, and the antiseptic pad, and cases that were not too far gone did well. The worse were those cases of pure septicæmia where there was no pain, no cellulitis, no odor. In these, the infection had passed beyond our reach.

Frequently a patient would have a chill with a rise of temperature a half hour after the use of the douche. This chill need cause no alarm, is traumatic, and convalescence will go on undisturbed.

After normal confinement, the use of the douche is certainly uncalled for. He agrees with Lusk that sepsis usually depends on some fault of the accoucheur.

Dr. A. Palmer Dudley, of New York, thought a case of sepsis that was often overlooked was the presence of an unilateral pyosalpinx. This might easily light up inflammation after being subjected to the traumatism of labor. A careful examination of the tubes and ovaries in these cases might reveal the cause of the trouble and show the necessity for even laparotomy.

Dr. Howard Kelly, of Philadelphia, in certain severe and rapidly fatal cases thought the alternative of laparotomy and removal of the entire uterus might save the patient. It would be no more severe than the Porro operation. The use of his obstetric cushion, similar to that used for laparotomy, was of the greatest value where the surroundings were dirty and poor. It kept both the patient and the *bed* clean and dry.

Dr. W. Gill Wylie, of New York, believed in frequent washing-out of the uterus, even every hour in some cases. When the trouble does not yield to washing, he often finds by careful examination that the focus of infection is in the pelvic tissues. In these cases it may be necessary to use the knife or aspirator, and evacuate the broad ligament through the vagina. In certain cases, the poison is localized in the tubes or in the peritoneal cavity, and laparotomy with washing-out of the peritoneal cavity becomes necessary, other means having failed. Sepsis is a much more frequent cause of salpingitis than gonorrhœa.

Dr. Garrigues, in closing the discussion, said: When there is fever, search over the whole body carefully, and find the cause; if about the womb, then give the injection. The distinction between the various forms of septic infection is not practical at the bedside. The use of soap and water involves exposure to the surrounding air, and the possibility of infection through it which may occur. The risk may be removed by the subsequent douche that Polk employs. He would consider it hardly necessary to leave the gauze in the uterus after the disinfection. Chills are not common when hot water is used, but when they do occur discontinue the douche. Laparotomy after confinement must have a very limited application, both on account of objection on the part of the friends and doubt in the exact diagnosis, so that it must always be merely exploratory. He would prefer the intra-uterine suppository to the douche advocated by Wylie.

PHARMACY AND THERAPEUTICS.

The Action of Iodide of Potassium on the Heart.—As whatever emanates from the pen of Professor Germain Sée is always interesting I make no apology in offering to your readers the following abstract from the very important communication he made to the Academy of Medicine on the 8th inst. on the action of iodide of potassium on the heart. He began with the remark that it is not sufficient to affirm that iodide of potassium has a tonic action on the heart, but it must be proved that it is so and how or why it is so. This the learned professor had endeavored to resolve by experiments in the laboratory and by clinical observation. In conjunction with Dr. Lapicque (his *chef de clinique*) his researches were first directed towards the modifications of the blood pressure under the influence of the iodides of potassium and of sodium, to ascertain whether these salts produced a vaso-constriction or a vaso-dilatation, and also the conditions of the mode of their action. This was done by injecting into the saphenous vein of numerous dogs solutions of the iodide of potassium or of sodium in the proportion of one to ten parts. The dogs were feebly curarised, and a registering manometer indicated the pressure in the carotid or in the femoral artery. It is known that the salts of potash excite the heart and the vaso-constrictor nerves, and raise the blood pressure. Nothing of the kind takes place with the salts of soda. M. Sée had first verified that the radicle potassium conferred on its iodide the properties of the salts of potash. The following were the very interesting results obtained. When iodide of potassium or iodide of sodium is injected into the blood phenomena are observed which present two distinct phases. M. Sée designates the first "the phase of the alkali," and the second "the phase of the iodide."

When the iodide of potassium is employed the phase of the alkali is distinctly characterized. The heart's beat is accelerated, the pressure raised, and the tracings present great oscillations, which are slow and regular. When the iodide of sodium is employed, the phase of the alkali is indicated by a very slight elevation of the pressure, slowing of the action of the heart, with occasional intermissions. On the contrary, the phase of the iodide corresponds with the injection of either of the two salts, and it is indicated by the pressure, which descends slowly, in a continued manner, and by the action of the heart, which is accelerated. M. Sée offers in explanation of this similitude that the iodide of potassium is decomposed, that the potassium is eliminated, and that the iodine is thus found in the blood, combined with the sodium, whatever be the iodide primarily injected. However that may be, Professor Sée's experiments seem to show that the iodide of potassium first determines phenomena of excitation, with the action of the heart accelerated, an elevated pressure, a manifest vaso-constriction; then follows vaso-dilatation, with low pressure, which is also determined by the iodide of sodium. In the vaso-constriction, with elevation of pressure, and the strengthening of the heart due to the potassium, the vaso-dilatation and lowering of the pressure due to the iodine, we have, says M. Sée, the explanation of the effects of the powerful action of the iodide of potassium. The vaso-dilatation explains the hyperæmia of the bronchial mucous membrane and the hyper-secretion which results from this drug, and which is so useful to asthamatics for getting rid of viscous secretions. It explains the pulmonary hyperæmia which results from the venous stagnation in cardiac subjects. It also explains the anti-dyspnœic power of the iodide of potassium in facilitating the circulation of the medulla, and consequently restoring it to its normal functional activity. Immediately the paroxysmal or continued dyspnœa, the fits of suffocation, etc., completely disappear. The vaso-dilatation finally explains how the heart becomes freed from the obstacles which the tonicity of the arterial vessels presents to it, how the coronary circulation becomes more free, and how the heart becomes reinforced and beats with energy. On the other hand, iodide of potassium primarily strengthens the heart and the pressure. Hence M. Sée, comparing its action with that of digitalis, and studying the toxicity of the salts of potash, so exaggerated by physicians, has given it the name of "digitalic poison," that is to say, beneficial. It results from these considerations that iodide of potassium is applicable to the greater part of the diseases of the heart and of the coronary vessels.

Useful in the most diverse lesions, M. Sée would condemn it only when it determines hæmorrhages or permanent gastric iodism. It is not only useful against dyspnœa, it is still more so in many other cases, and M. Sée explains how and why it is so. Iodine reduces the fatty element in fatty degeneration of the heart. In fibro-adipose degenerations, in sclerosis, one cannot expect the reduction of the transformed tissues, but the muscular fibres which have quickened their circulation remain and are consequently improved in their function, whence the indication for iodide of potassium in all cases of degeneration. If the heart be weakened from overwork, or be in a state of asystolism, iodide of potassium renovates the weakened or distended tissues of the heart. If the left ventricle be hypertophied, the most that the drug can do is to render the cardiac circulation more active ; it cannot be injurious, as it does not reduce the muscular fibre. In coronary sclerosis (angina pectoris) it is useful in dilating the coronary vessels that have remained free and healthy ; but this is not an arterial medicament in the denutritive sense. In cardialgia (false angina pectoris), where the pains are so severe, where the respiration is polypnœic, it has incontestible advantages combined with antipyrin or with inhalations of the vapors of pyridine. In Basedow's disease, or where there already exists a morbid vaso-dilatation, the iodide of potassium will be useless, or even dangerous. On the contrary, it is in aneurism of the aorta that it succeeds, although it is not by producing the coagulation of the blood, as is generally believed. But it is here, in particular, that M. Sée objects to the use of iodide of sodium, the employment of which nothing can justify.—*Paris correspondent of the London Lancet.*

INSOMNIA OF HYSTERIA.—

℞.	Peacock's Bromides, - - - - -	4 oz.
	Celerina [Rio], - - - - - -	2 oz.

M. Sig. Teaspoonful every two hours until sleep is produced.

ABNORMAL OR CONTRARY EFFECTS OF ANTIPYRETICS.—Professor S. E. Heuchen, of Upsala, has frequently observed in the academical hospital the so-called contrary effects of antipyretics, mostly of chinolin, but also of antipyrin, antifebrin, and phenacetin. He believes the increase of temperature on administering these drugs to be due to a variety of causes. In some of his observations there might have been a spontaneous rise of temperature, while in others the symptom is explained as being due to an irritation communicated from certain parts of the body. Professor Heuchen mentions several cases in which the administration of chinolin resulted in vomiting or diarrhœa. In these, however, the doses had been large enough to be considered toxic. A similar explanation is suggested of a case mentioned by Laache, in which an extensive rash was produced, the temperature sank, and the patient became collapsed. A rash was observed by Heuchen only in cases in which chinolin had no abnormal action on the temperature. The best explanation of this singular occurrence is, however, probably to be found in the observation of Geigel, of Würzburg, who states that on administering antipyrin or antifebrin the temperature always first rises and then rapidly falls upon the appearance of diaphoresis. He thinks that in those cases in which the diaphoresis is slow in appearing, the rise in temperature has probably also lasted longer, so that this contrary effect is due solely to the absence of diaphoresis.—*London Lancet.*

TREATMENT OF ECZEMA, PSORIASIS, AND PITYRIASIS.—At the International Congress of Dermatology and Syphilography, Dr. Gourbault reported a number of cases of eczema, psoriasis, and pityriasis. which he had rapidly cured by the following syrup and ointment: Sixteen ounces of the syrup contain—of bicarbonate and acetate of soda two drachms each, also two drachms of extract of gentian, and a similar quantity of extract of sarsaparilla; a small amount of rhubarb and senna may be added at the physician's discretion. The dose should be two fluid ounces daily.

The formula for the ointment is as follows:

℞.—Ergotine, Perchloride of iron,	āā ʒss
Vaseline,	℥j.

M. et fiat unguent.

This should be applied to the affected parts twice a day.

THE CHEMICAL CHANGES IN THE GASTRIC JUICE. By Dr. Bourget, in *La Revue Médicale.*—Dr. Bourget, in this paper, after criticising the theories of Bourchard and Glenard, proceeds to give the result of his experiments with regard to the action of certain substances upon the contents of the stomach. Salol only undergoes change after passing the pyloris and coming in contact with an alkali. Dr. Bourget found that on taking 2 per cent. HCl with a meal salol was discovered in the urine 1¼ to 1½ hours afterwards, while if he partook of fruit and vegetables the time which elapsed was reduced to from a quarter to half an hour. He argues from this that conclusions drawn from the use of salol are subject to great error. Dr. Bourget objects to the common plan of prescribing pepsin in disease of the stomach. He says that in sixty-three cases after analysis of the contents of the stomach sufficient pepsin was present for the purposes of digestion. In fifteen cases of carcinoma pepsin was never deficient in quantity. This was also the case in forty cases of chronic and subacute gastritis. In sixteen cases of carcinoma Dr. Bourget never found full HCl in the stomach. In seven cases of ulcer of the stomach the quantity of HCl was great, but no pyrosis was present. In thirty-six cases of gastritis under observation HCl was absent, only to return with return of health. When HCl is absent lactic acid is present. In a case of chronic gastritis Dr. Bourget found 1.60 per cent. of lactic acid and no HCl. The lactic acid being the product of micro-organisms in the stomach, the process of their development is checked by HCl. Bicarbonate of soda is useful, but brings no permanent benefit. Instead of using these drugs, he says, "Prevent the formation of lactic acid by the administration of HCl." From these observations he concludes (1) that pepsin is nearly always useless in the treatment of these diseases, (2) that pyrosis ought to be combated not by alkalies, but by HCl (3), and that alkalies should never be given until the process of digestion is completed.—*American Journal of Pharmacy.*

USES OF ANTIFEBRIN.—Salhi (*Corresp. f. Schweiz Aerzte*) found antifebrin to act as a useful palliative in cases of sore throat and diphtheria; also in angina accompanied by high fever, the dose being 0.25 gm. three times daily.

ERYSIPELAS.—

℞.—Picric acid	3 parts.
Water	500 parts.

Wash five or six times a day.—*Calvelli in Revue de Therapeutique.*

ANGINA PECTORIS.—

℞.—Hydrobrom. of cocaine	gr. x.
Alcohol	gtt. xv.
Distilled aqua-lauro-cerasi	ʒ vj.

Dose.—Inject beneath the skin, during an attack, one-quarter or one-half of a Pravaz syringeful.—*Dujardin-Beaumetz.*

In blennorrhagia, especially the chronic form, try injections that return, of glycerole with boric acid, of a saturated solution of picric acid, or of the following formulæ:

℞.—Creasote	gtt. 10.
Hamamelis, Hydrastis	āā gtt. 20.
Water or water of roses	ad oz. iv.

Dilute the latter solutions so that they will not burn.—BRENNAN, in *L'Union Med. du Canad.*

SUPPOSITORIES FOR ENDOMETRITIS.—Terrier, in the *Revue de Thér. Méd. Chirurg.*, directs:

℞.—Powdered iodoform	ʒ ijss.
Tragacanth	gr. viij.
Glycerin Distilled water	q. s.—M.

For 10 suppositories.

These suppositories should be made in the form of crayons, about the size of a nitrate of silver point, such as is used for cauterizing. Resorcin or salol may be used in place of iodoform in the formulæ, the same quantity being admissible. If, however, bichloride is preferred, the formulæ should be altered as follows:

℞.—Sublimate of mercury	gr. viij.
Powdered chalk	ʒ vjss.
Tragacanth	ʒ xxiv.
Glycerin Water	q. s.—M.

For 50 suppositories.

These suppositories should be placed in the cavity of the uterus after the vagina has been thoroughly washed and disinfected with sublimate solution. A tampon of iodoform gauze may be placed in the vagina.—*Times and Register.*

CORONILLA—A NEW HEART REMEDY.—Coronilla scorpioides, the annual plant from which this remedy is obtained, belongs to the family Papilionaceæ, suborder Coronillæ, and is widely distributed through the southern parts of France. From experiments made on animals, Dr. Cardot has determined that the coronilla arrests the heart of the frog in systole, and in his inaugural thesis sustained in Nancy in 1886 he refers to four cases in which this remedy had produced considerable amelioration in various cardiac affections.

Dr. Cardot's statements, however, attracted but little attention until recently Schlagdenhauffen and Gley and Spillman have again called attention to this subject in papers read before the Société de Biologie, while finally, quite recently, Schlagdenhauffen and Reeb, (*Revue Générale de Clinique et de Thérapeutique*, July 25, 1889) state that they have isolated a glucoside from the coronilla, which they term coronillin, of which the toxic dose would amount to ¾ of a grain for a man weighing about one hundred and twenty pounds.

Nevertheless, the authors maintain that to produce any therapeutic effect, 2 to 3 grains must be administered, or from 9 to 22 grains of the extract. The remedy is stated to act especially on the myocardium, whose contractility it increases.

Dr. Spillman has employed it in seventeen cases of heart disease, administering it in the asystolic period. In eight cases the remedy is stated to have produced satisfactory results, in two cases it produced very slight amelioration, and in seven cases its therapeutic action was entirely negative. A diuretic effect was frequently observed, the amount of urine evacuated daily increasing in a few days from seven ounces to two to four qnarts.

Coronilla is stated to act but feebly on the number and rhythm of the cardiac pulsation, but it is claimed to produce an increase in the amplitude of the pulse and augmentation of the diuresis, and diminution of œdema and improvement in the respiration.

In Dr. Spillman's case the remedy was administered for three or four days in succession, and the therapeutic effect was only perceptible twenty-four to thirty-six hours after the administration of the first dose.

It appears that whatever good effects may be obtained from the use of this remedy, they are of the most transient character, since it is stated that twenty-fours hours after the cessation of the use of this the patient's condition returns to its original state.

The value of the remedy is thus highly problematical, especially when we take into consideration, that while Schlagdenhauffen states that ¾ of a grain is a poisonous dose, Dr. Spillman should, nevertheless, recommend the administration of from 3 to 5 grains.

Evidently further studies are required before any definite opinion can be expressed as to the value of this one of the most recently recommended remedies.—*Therapeutic Gazette*

NAPHTHALIN AND TYPHOID.—According to the Berlin correspondent of the *Medical Press*, August 7, 1889, naphthol and naphthalin are now much employed as disinfectants of the intestinal canal, owing to a general belief in their germicidal power. Dr. Sehrwald has lately carried out a series of investigations, with a view of determining precisely their efficiency, in the laboratory of Professor Rossbach, of Jena, the results of which have lately appeared in an interesting form in the *Berlin Kl. Wochenschrift.* His investigations were very extended and included a large number of cultivation experiments, as well as experiments on animals. His results may be summarized as follows:

Naphthalin acts only slightly on the micro-organisms of decomposition and of the fæces in typhoid, when the temperature is that of the room. Increased surface-action of the naphthalin, however, increases its power; when the temperature was raised to that of the body the action was much more intense, and it appears probable that the naphthalin first acts on the germs as a gas, damaging and destroying them. As a disinfectant in gaseous form it must act on fluids, more energetically in aërobes than on anaërobes. It must also attack such germs as are on firm soil more energetically than on those floating in liquids. The conditions in the intestinal canal favor the action of naphthalin, as the most favorable range of temperature is kept up, and the intestines by their peristaltic action favor the thorough intermixture of the germicide with the material to be disinfected. Naphthalin added to a fæcal mass reduces the germs to about one-half outside the body, but within to one-third or a quarter. The number, however, again increases in a short time, as some of the germs that have been more resistant than others recover their power of development. Added to typhoid stools naphthalin reduces the germ-contents to nearly one-tenth. Even the germs that remain after the administration of calomel are much damaged. As typhoid is to be considered a mixed infection, the administration of naphthalin should be begun from the first. The fact now ascertained, that part of its power is due to its action in the gaseous form, furnishes a new justification for its employment. As calomel acts as a germicide on some of the germs, it should be given; but as it spares others which in their turn are acted on by naphthalin this also should be given in order to make the treatment as rational as possible. Some of the naphthalin introduced into the body is absorbed and excreted through the kidneys. There is no reason to believe that this portion acts in any way as a germicide.—*Therapeutic Gazette.*

DR. GEORGE C. IRWIN, Sabetha, Kan., (*Arch. Ped.*), reports a case of uncomplicated pertussis, with severe laryngeal spasms of hourly occurrence, in an infant three months old. Other remedies having failed, he gave phenacetin in half-grain doses in ten drops of glycerine, which is a solvent. It gave immediate relief, being repeated every four hours.

ORIGINAL CORRESPONDENCE.

A Brief Review of Surgical Bacteriology.

NORFOLK, Va.

To the Editors of GAILLARD'S MEDICAL JOURNAL.

Dear Sirs:

"Surgical Bacteriology. By Nicholas Senn, M. D., Ph. D., Professor of Principles of Surgery and Surgical Pathology, Rush Medical College, Chicago.

"This is a wonderfully interesting and instructive little book. The revolution, not only in surgical pathology, but also in the practice of surgery, due largely to the advances in bacteriology, naturally make the subject one of great interest to a large part of the profession. The amount of information garnered from every source, makes the book invaluable, and it is not only to the surgeon that it will prove instructive. The chapters on 'Hereditary Transmission of Microbic Diseases.' 'Do Pathogenic Micro-organisms exist in the Healthy Body,' and 'Sources of Infection' are worth the price of the book to every practitioner of medicine. We had expected to quote some remarkable facts from the text, but have not the space at our command. The work is thoroughly scholarly, is beautifully gotten up, and altogether worthy of the closest study and thought."

The above is taken from the "Review" department of GAILLARD'S MEDICAL JOURNAL for September, page 295. This is high praise, such as I have scarcely ever seen bestowed on any work, either surgical, medical or pathological. So soon as I read it, I ordered it from the Publishers, Lea Brothers & Co, Philadelphia. At once I devoted "the closest study and thought" to its subject matter. The divisions specially commended "to every practitioner of medicine" I have "studiously and thoughtfully" pondered over and over again, and I am compelled to say, without finding much matter that is "instructive," to say nothing of that which is designated as "invaluable."

Our author, Nicholas Senn, M. D., Ph. D., introduces us to his subject by informing us that, "During the last fifteen years there has been more real advance made in surgical pathology than during twenty centuries preceding them. At this time surgical pathology has almost become synonymous with surgical bacteriolgy. The many discoveries which are being made in rapid succession—works on pathology soon become old—and are consigned to the shelves of the antiquarian almost before they have left the press. No discovery is accepted unchallenged, and all new devices are subjected to the crucial test of criticism based on original research," pp. 17-18.

"Independent thought and investigation!—crucial test of criticism!"—can any scientific investigation rest on higher grounds? But as our author is about to open his investigations of the first subject discussed in his book, he frankly tells us, instead of pursuing the course above designated, that he "will only speak of the clinical observations and experimental work *which tend to prove* the direct transmission of pathogenic microbes from the mothers to the fosters." In regard to such "clinical observations and experimental work," as may tend to *disprove* his proposition, he leaves his readers to be kept in ignorance. As a confessed partisan, he then proceeds to present such discoveries and claims, without "challenge" or "criticism" as "will tend to prove" the

"HEREDITARY TRANSMISSION OF MICROBIC DISEASE."

The first witness introduced is one Lebedeff, who "reports a case of premature birth, eight days after the mother had recovered from erysipelas. The child lived ten minutes, and Lebedeff found Fehleisen's streptococcus in the lymphatic vessels, the diseased skin, and in the umbilical cord, but not in the placenta," p. 20.

Not a word is said about the length of time between the death of the fœtus and the examination. It might have been sufficiently long for the putrefaction of the tissues, and the development of the numerous bacteria. Because, however, the streptococci, which are often found in the progress of erysipelas, were found in some of the tissues of the fœtus, we are required to adopt the conclusion that they were transmitted from the mother. Surely, "the discoveries" of this witness do not even "tend to prove" the proposition.

Curt Jani examined the sexual organs of nine phthisical patients for tubercle bacilli, and found none. On the other hand, *he found a few* in apparently healthy testicles and prostates. He *found no bacilli* in the ovaries of two women who died of pulmonary phthisis. He found tubercle bacilli in the Fallopian tubes of one case who had suffered long with tubercles of the lungs and intestines. The infection of the impregnated ovum by the placental circulation *must be unusual*, because the examination of the body of a woman, five months pregnant, who died of acute miliary tuberculosis, showed no bacilli in the placental attachment, in the lungs or in any of the organs usually the seat of localization in the embryo, pp. 20-21.

Finding his witnesses rather refractory, and their testimony tending to prove the negative of his proposition, our author comes to the rescue and proclaims, "that pathogenic micro-organisms may exist in the blood of apparently healthy mothers, because children have been born suffering with acute suppurative osteomyelitis, while those others through whose blood alone the micro-organisms could have come, showed no evidence of disease," p. 21. This is begging the question. It assumes, 1st—That micro-organisms produce osteomyelitis. 2d—That the fœtus must have derived them from the mother. 3d—That they must have existed in the blood of the mother, all of which are assumptions, without a particle of evidence.

Koubassoff testifies, in direct conflict with others, "that in pigs the microbes of malignant œdema and tuberculosis pass directly from mother to offspring through the placenta," p. 23. While with Kroner, who made his experiments on rabbits with the bacteria of sepsis the results obtained were not constant. In the blood of the fœtuses no bacteria could be found, etc. But one of the strongest evidences has been furnished by Johne, who found numerous tubercles in the tissue of a calf whose mother died of tuberculosis. But none were found in the uterus or placenta, p. 23. Not a word is said about microbes being found by this witness. Two Japanese physicians now appear upon the stand, who appear to be specialists in syphilis. "They inoculated gravid bitches with the deplococcus of syphilis, and found that the microbe permeated the placental tissues and entered directly into the circulation of the fœtus," p. 24. Who are Drs. Disse and Taguchi—the Japanese physicians? Well may our author observe: "If future researches should corroborate their claims, their researches will constitute an important contribution to our knowledge of the heredity of disease." This is an admission by our author that the claims of our Japanese doctors "have not been corroborated," in which your "Review" fully coincides.

Having inadvertently omitted one witness we now introduce:

"Max Wolff, who has studied the subject of intra-uterine transmission of infective diseases by a series of carefully-conducted experiments. He worked with the cultures of anthrax baccilli, and examined the blood and internal organs of the fœtuses under the microscope, and tested *their sterility* by cultivation and inoculation experiments. The pregnant animals which were inoculated with a fine culture of anthrax bacilli, manifested symptoms of the disease in from thirty-six hours to three days. The blood and internal organs of twenty-nine fœtuses contained no bacilli, as was shown by most careful microscopical examinations, after single and double staining—156 cultivation experiments with tissues from kidney, liver and lungs yielded only six positive results, which he attributed to contamination with maternal tissues. He affirms that the placenta constitutes an impervious barrier to the passage of micro-organisms, from the maternal into the fœtal circulation," p. 22.

In the face of all this conflicting testimony, the weight of which is heavily against the transmission of micro-organisms from parent to child, our author is so infatuated with his theory that he affirms that: "All of the above observations and experiments furnish substantial proof that in some infectious diseases, heredity is traceable to direct transmission of the specific microbes floating in the circulation of the mother to the fœtus." If, indeed, "surgical bacteriology," which is claimed to have affected a greater improvement in pathology in fifteen years, than had been accomplished in the preceding 2,000 years, rests upon no more substantial basis than this, it surely only has a reason to live, while it is dead — it is a mere shadow, without the substance.

We are now about to consider that branch of bacteriology on which reposes the great principle which must decide the fate of bacterial pathogenesis. Our author opens the discussion with the significant question:

"DO PATHOGENIC MICRO-ORGANISMS EXIST IN THE HEALTHY BODY ?"

In order to understand the subject under consideration, it will be necessary to define the terms which are so often used, viz: "A germ in botany is the embryo of the germinating seed, the exact point from which the life and organization of the future plant are to spring." —*Thos. Med. Dict.*

"A spore, from spora, a seed, is a body in cryptogamous plants which is analogous to the seed of the phenogamous. A spore does not contain an embryo, and in some instances consists of a single cell." "A sporangium is the spore-case or membranous capsule containing the spores of cryptogamous plants."—*Ibid.*

Before introducing his witnesses on either side of the above question, the author sums up his case and proclaims what he expects to prove in the following paragraph:

"It has been definitely ascertained by experimental research that many of the pathogenic germs are harmless as long as they remain in the circulating blood, and that their specific pathogenic action becomes evident after localization takes place in some part of the body, *in a soil prepared by injury or disease, for their arrest and multiplication.* (Italics mine.) It has also been definitely settled by clinical experience that pathogenic spores may remain in a healthy body in a latent condition, for an indefinite period of time, until by some accidental *pathological changes* the tissues in which they may exist *have been prepared for their growth*, etc., etc.," p. 25. In substantiation of these affirmations the following witnesses are adduced, viz:

Foder, pp. 25-26. "As a rule pathogenic germs are not present in the healthy organism, as he found the blood of healthy rabbits, without exception, sterile; and only in exceptional cases was he able to demonstrate the presence of bacteria in animals killed, even when the examination was postponed *until putrefaction had set in.*" Hauser, pp. 26-27, "Believes he was able to demonstrate that tissues taken from healthy animals immediately after death contain no bacteria." Watson Cheyne, p. 27. "Found in his experiments, that *while germs were absent when the animal was in a good state of health*, yet when the vitality of the animal was depressed by large doses of phosphorus for some time, organisms could be found at times in the blood and tissues of the body. Again, it has been found that, while some micro-organisms when introduced into the living body in small numbers, disappear after a short time, when a *large* *quantity of the cultivation is introduced, the tissues of the body are injured by the pre-existing ptomaines*, and the germs retain their vitality and often produce their specific pathogenic effects." Hence Fodor, p. 27. "Anthrax bacilli injected in large quantities directly into the circulation, disappeared from the blood in four hours, but within twenty-four hours they re-appeared and the animal died."

These last two facts establish a suggestion of the writer's made in this journal several years ago, that it would be found, "that injections of septic cultures produced pathogenic effects, through the ptomaines they contain, and not bacteria, which can only live and perform their life processes in dead, putrid or septic matter.'' On page 29, we are told, "that the resistance of micro-organisms to heat and cold, moisture and dryness is so great they sustain their disease-producing qualities for an indefinite period of time, and after their entrance into the body, *and meeting with a proper nutrient medium*, they exert their specific pathogenic effects." On page 37, we are told, "that certain facts very strongly suggest that suppuration and tuberculosis would not have taken place in the part injured *without the injury*."

On p. 39 Huber is quoted as saying: "Localization of pre-existing micro-organisms *in tissues prepared by injury or disease* takes place, provided the necessary conditions for their growth are present." On p. 41, we are told, "that the bacilli of anthrax when injected into the blood in small quantities soon pass out without producing any pathogenic effect, but *if a contusion is produced* in some part of the body, the bacilli pass into the contused tissue with the blood and grow there, etc., etc." On p. 42 Schueller, Szuman, Verchière. On p. 43, Wartmann; p. 44, Rosenbach, Wyssokowitsch, and on p. 45, etc., Ribbert, Steinthal and the author, all speak of "wounds, strains, bruises, lacerations, inflammations, etc., affording proper soil for the germination of pathogenic microbes." Orloff, on pp. 52 and 53, gives interesting facts, all of which show "that microbes may remain for years in a granulating tissue, during the healing process, in a latent condition until by some accidental cause the surrounding tissues had *undergone a change favorable for their growth*." In all these instances the soil had to be prepared by disease, wounds, contusions, etc., so as to destroy the integrity of the tissues, and thus form suitable pabulum for the micro-organisms before they could germinate or perform their life-process. To these witnesses, to this fundamental fact, we will append the testimony of others better known and more worthy of credence:

Koch, (report in *American Jour. Med. Sci.*, 1884, p. 189).

"It is needless to say that in extensive examinations of healthy and morbid, but non-tubercular tissues these bacilli (tubercular) were never met with." "That the bacilli of tuberculosis are limited to a parasitic mode of life in animals and can not grow outside of the body under the conditions found in nature." On p. 188 Koch says: "The bacillary invasion of healthy tissues invariably precedes the tubercular invasion."

Here we have the great authority in bacteriology, Koch himself, making diametrically opposite declarations as *facts*. He declares he has never found tubercular bacilli in healthy or non-tubercular tissues. And yet he affirms "that bacillary invasion of the healthy tissue invariably precedes the tubercular invasion." How is it possible for him to affirm "that bacilli invade the healthy tissue, before tubercles are developed," when he as unconditionally declares that he has "in extensive examinations of healthy tissues never found them?" To say that he means that bacilli invade tissues affected with other diseases, besides tuberculosis, and therein produce tubercle makes it no better, for he as distinctly affirms "that he has never met with them in healthy or *morbid tissues*, other than tubercular." "A house divided against itself cannot stand."

Koch, Pasteur and Ehrlich (Cartwright's Lectures, 1884, p. 28), the three most noted observers of the present day, affirm that they have never detected bacteria in a healthy animal," p. 29. "For seventy years a man may eat, drink and breathe the ordinary bacteria, and carry a vast and varied assortment of them in his alimentary canal, without suffering putrefaction; yet so soon as his component cells are destroyed, generally as in the death of the animal, or locally as in the gangrene of a toe, the tissues swarm with these minute organisms." (Belfield, et supra.) Belfield, (Cartwright's Lectures, p. 32). "The impossibility of thorough examination of human tissues, not only during life, but also for hours or days *post-mortem*, restricts materially the field of clinical observation on this subject; for a few days, even hours suffice to people a dead body with bacteria." And yet: "Zandon (Virch: Arch: Bd., LIX), announced the probable discovery of the bacterial origin of yellow atrophy of the liver, when the examination was made fifty-four hours after death!"

Cheyne, (*American Jour. Med. Sci.*, 1886-1887, p. 91): "A most interesting and important question is, whether bacteria are normally present in the tissues and juices of the healthy living body? This has now been shown not to be the case, or at least if they do penetrate into the body, they are rapidly destroyed. In the case of animal tissues there is now a large amount of evidence to show that bacteria are not normally present in the tissues in health, at any rate that they are neither present in any numbers nor for any length of time. That they may now and then gain access to the healthy blood through scratches, etc., is extremely *probable*, but they very rapidly die and are excreted by the kidneys," p. 103. "Traube and Gscheidlen came to the conclusion as the result of their experiments, that the living blood and tissues have the power of destroying micro-organisms I came to the same conclusion with regard to healthy animals." On p. 92 Cheyne says: "A number of observers have shown that micro-organisms are not present in the healthy blood, nor in such secretions as milk and urine when freshly drawn from the body, the latter fact proving also that bacteria cannot penetrate along small mucous canals when the surfaces are healthy and in opposition."

The testimony of quite an additional number of witnesses could be adduced to establish this proposition, but space will not permit it. The sense of the matter is this: If bacteria cannot germinate and live in healthy fluids or tissues, how is it possible for them to produce disease in such fluids or tissues? And if they can germinate and live in healthy fluids or tissues, in view of the vast number of spores with which the air, earth and water are laden, how is it possible that either vegetable or animal matter can withstand their ravages? And if they can only perform their life processes in soils adapted to their germination and growth, and those soils are never found in healthy tissues or fluids, is it not apparent that they can only survive in diseased or decaying matter? And if they can only live in diseased or decaying fluids or tissues, and die, so soon as the food thus supplied is consumed, is it not plain that they are the offspring and not the cause of such disease and degeneration? And since they only consume the products of disease, decay and death, is it not apparent that instead of being pathogenic, their functions are salutary and sanitive?

"In this way (says Trouessart, Microbes Ferments and Moulds, p. 6), they clear the surface of the earth from dead bodies and fæcal matter; from all the dead aud useless substances which are the refuse of life; they are nourished at the expense of organic substances in a state of putrefaction."

Despite all this Professor Senn affirms that "within a few years bacteriology has revolutionized pathology. All wound complications and most of the acute and chronic inflammatory lesions which come under the treatment of the surgeon, are caused by micro-organisms." Believing that the true pathology of inflammation, as well as its results, resolution, induration, softening, morbid growths, ulcerations, suppuration, gangrene, etc., etc., had been *demonstrated* and *settled* beyond cavil or dispute, fifty years ago, by the researches and investigations of Hunter, Bichat, Magendie, Reid, Lawrence, Wilson Philip, Gendrin, Carswell, Le Gallois, Brodie, Hall, Kaltenbrunner and others, I was amazed at the above affirmation of Dr. Senn, and concluded I would secure, if possible, the opinion of the greatest living surgeon on this subject. I made haste, therefore, to address a note to the distinguished surgeon, Lawson Tait, who promptly and kindly gave me the following response:

BIRMINGHAM, *Oct.* 1, 1889.

Dear Sir:

I use none of the usual germicidal washes, nothing but plain water from a tap. The advances in so-called "bacteriology" have had nothing to do with surgical success, and have contributed only to our exact knowledge of methods of decomposition. They have not yet, as far as surgery is concerned—and I believe only to a very limited extent in what are called medical diseases—contributed any exact information to pathological advance. My success would have been as great, and I think more rapid, if Lister and his devices had never been heard of. Listerism stood in the way, from 1877 to 1882 as a bugbear. Yours Truly,

LAWSON TAIT.

"I have only made a very superficial review of the basis principles of "surgical bacteriology," because time and space would not permit anything more. By your permission I desire to notice, in a future article, some of our author's startling propositions in relation to pathology. L. B. ANDERSON, M.D.

REVIEWS.

CYCLOPÆDIA OF THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. The Articles Written Especially for the Work by American, British and Canadian Authors. Edited by John M. Keating, M. D. Vol I. Illustrated. Philadelphia: J. B. Lippincott Company. 1889.

We had occasion in some reviews last month to especially comment on the energy, activity, and enterprise of our American publishers. The present work is an additional evidence of those traits and is the result of the excellent work of authors who cover a wide field. If there was one fault in that most excellent work of Gynæcology and Obstetrics that has lately been completed, it was confining the authorship to Americans; and we are glad to note that this has not been done in the present instance.

The idea of the book is to present the subject of children's diseases in its entirety, indeed a second Pepper's System of Medicine only confined to children. Exception was taken a number of years ago to to the title "Diseases of Children," and the issue of it was that one of the best works heretofore published bears the title "Diseases *in* Children." We do not know that it is a matter of much import; nor are we prepared to say that the latter is the only correct phrase. The volumes when complete are to give us all that is known, medical or surgical about children. That there should be enough to fill several large volumes will be a matter of surprise to many; and yet pediatrics has been by no means the least progressive of the departments of medical science. The editor's preface gives this as the summing up of the work: "The work, in fact, consists of a collection of monographs not mere dictionary articles—arranged in the form of a systematic treatise, and devoted to the consideration of the anatomy, physiology, medicine, surgery, and hygiene of infancy, childhood, puberty, and adolescence." "Each writer is alone responsible for his statements. Many of the collaborators have deemed it expedient to consider their subjects from the standpoint of the adults viewing in detail the various deviations as affecting childhood. Some on the other hand, taking for granted a perfect familiarity with adult diseases, have dwelt entirely upon the affections of childhood."

We are not in favor of a mixed affair; but it will not make any difference in the end if the knowledge we seek is given.

After an introduction by Dr. Jacobi, this volume opens with an article "On the Anatomy of Children." The editor might well offer in his preface an explanation of the illustrations in this article, the large majority of which conceding "accuracy," or any other good quality—are a confused mass. They often rather confuse than assist in making clear the text; but there is always one thing to remember that where a matter is written clearly, as is the case in the text of the article, we do not really need the illustrations and if they are confusing we are at perfect liberty not to look at them. Fifty pages are occupied in giving us the anatomy of children; and the physiology of infancy is given in twelve, the author of the article fitly giving this as a part of his "Summary." "It will be seen that the subject of the physiology of infancy is a comparatively unworked field, but a most interesting one nevertheless."

The next article is on "Diagnosis"—that is, diagnosis in a general way, and in it the author is charmingly sarcastic on "the manifold forms and degrees of suffering or illness to which the young are subject" being ascribed by *every young practitioner* (no old ones Mr. Finlayson ?) to that "fetich" called "Teething." The article is full of useful suggestions and must be of great practical value to the practitioner, but the author thinks it necessary to refer the reader to the "Clinical Manual" by himself, where a fuller account of the symptoms may be found.

The next article on "The Influence of Race and Nationality Upon Disease," gives the distribution of several diseases and is useful for general information in its line, though there is little of it.

The next article is to us, at least, one of the most interesting, practical and best written articles in the book. Its title is "Outlines of Practical Bacteriology," by Dr. Shakespeare.

The next article is on "Maternal Impressions." It is an interesting resumé of what has been written or rather what has been offered the profession in a somewhat definite shape on a subject which is still wrapped in much mystery. The author contributes very little to the explanation of the phenomena recorded; but he emphasizes an important fact as a deduction from those recorded: "Defects traceable to maternal impressions, are sufficiently serious in character to necessitate the avoidance by any pregnant woman of all violent emotional disturbances especially those of an unpleasant character."

The next is an interesting but short article on the "Diseases of the Fœtus." Then follows an article on "The Care of the Child at and Immediately After Birth in Health and Disease," and with due respect for Dr. Penrose we must say that his argument on p. 238 is entirely irrelevant unless it refers to plural births—and he by no means makes it plain that he does—and, if it does refer to plural births, is at variance with the majority of the best writers and teachers of obstetrics; and so far from the blood contained by the application of a double ligature (in single births) being a disadvantage, it is a material assistance in the separation of the placenta from its uterine attachment and in facilitating the delivery of the placenta.

Of the several articles which follow, the one on "Infant Feeding" is of interest theoretically and practically. The others are entitled "The Closure of the Ductus Arteriosus and of the Umbilical and Hypogastric Arteries," "Injuries of the New-born," "Wet Nurses," "Diet After Weaning," "Nursing of Sick Children," "Nursery Hygiene," "Dentition," (the author will be surprised perhaps, when he reads the article on "Diagnosis" already mentioned), and "Puberty: its Pathology and Hygiene." This ends Part I. Vol. I., and we must acknowledge that we were somewhat disappointed so far; but the remainder of the volume makes due compensation in the fulness, fairness and excellence of the contents for such disappointment. It considers "Fevers and Miasmatic Diseases." Each article is splendid; Typhoid, Cerebro-Spinal, Scarlet, Typhus Fevers, Diphtheria, Measles, Rötheln, Variola, Rheumatism, etc. We must call attention however, to the numerous mistakes in the prescriptions in the article on "Diphtheria." We certainly have a right to expect the text of these to be in conformity with the U. S. P. of the present time, and some of the words have authority at any time. While this does not in the least, form a practical standpoint, vitiate the article, from the standpoint of scientific accuracy it is certainly to be regretted. Two articles, "Joined Twins" and "Embryology," both of them out of place because of the late receipt of the manuscripts, close the work.

We have been compelled to speak of the articles on "Fevers" only in a general way, and we wish we could call attention to the many valuable facts contained in each; but this would be impossible and we must conclude our observations on the book as a whole that it is a splendid contribution to the literature of the subject and we hope it will receive a large patronage. We await the other volumes with much interest.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY. With Introductory Chapters on General Biology and a Full Treatment of Reproduction. For Students of Human and Comparative (Veterinary) Medicine and of General Biology. By Wesley Mills, M.A., M.D., L.R.C.P. (Eng.), Professor of Physiology in McGill University, and the Veterinary College, Montreal. With over 500 illustrations. New York: D. Appleton & Co. London: Caxton House, Paternoster Square. 1889.

At the present time, when there is such a multiplicity of books upon almost every subject, and almost every one feels it incumbent upon himself to write a book, it is refreshing to receive a production in which the author has departed from the well-trodden and more frequented paths and has directed his course into comparatively new fields. Our medical institutions have heretofore paid too little attention to the study of evolution, biology and comparative anatomy and physiology, from which so many important facts are obtained upon which a near approach to a true physiology can be built. The author commences his work with the consideration of general biology, treating it clearly and succinctly, and in a way which shows him to be at home with his subject, and also a student and keen observer of nature. Commencing with the lowest stage of organized animal life he carries you successively through the different forms until that highest form of all, man, is reached. All the more important points are treated, and while enough is said upon each one separately, that interdependence of all parts, which is such a striking characteristic of nature, has been carefully kept before the reader. Indeed, in several places, the author emphasizes the fact that to make a normal observation of any one part of the human organism, that part must bear its normal relation to all the other parts. While what he has said upon the nervous system will, to the extreme "localizationists," probably appear cautious, yet it is in accord with the more recent observations, and although he does not state some points as emphatically and positively as some other authors do, it is because he does not believe experimentation is as yet sufficiently conclusive, and he argues well in support of his disbelief. The book is profusely illustrated, the cuts being numerous, well chosen, and explanatory of the subject in question; it is also very well printed, and from an artistic point of view reflects credit upon the publishers. It will be a valuable addition to the library of the advanced student and practitioner.

TRAVAUX D'OBSTETRIQUE. Du Docteur A. Auvard. Accoucheur des hôpitaux de Paris. Tome Premier. 115 Figures. Paris: Le Crosiner et Babé, Editeurs. 23, Place de l'école-de-medicine.

This work of Dr. Auvard consists of three volumes: the first containing articles that have already appeared in print in the *Archives de Tocologie des maladies des femmes et des enfants nouveau-nés*, the second and third, of articles that have not yet been published. We would consider it not a systematic work on obstetrics, but a record of careful and numerous observations on obstetrical subjects, giving the statistician much valuable information and giving the obstetrician in addition to this, interesting and useful deductions and practical points gleaned by the hand of an accomplished and unusually experienced accoucheur.

Nearly every subject in obstetrics is considered in one place or another, but there is no general system underlying the work. The illustrations are at least not an ornament, and the general make-up of the book, from an artistic standpoint, cannot lay claims to anything extraordinary.

As an evidence of great industry, careful thought and practical suggestions, the book deserves careful attention and thoughtful reading; but the lack of scientific arrangement and the variety of topics treated in a desultory way will probably not attract a large number of subscribers.

IN MEMORIAM.

ISAAC E. TAYLOR, M. D.

DIED OCTOBER 30, 1889.

The Council of the New York State Medical Association sadly records its unfeigned sorrow for the loss of a valued Founder, Fellow, and late President, endeared by his personal qualities as he was admired for his scientific attainments.

An illustrious name is transferred from the active list to the roll of honor of those who have bravely borne themselves in the foremost rank, and fallen triumphant.

Untiring in industry, wise in counsel, affectionate in friendship, steadfast in religious faith, beloved by his associates, and revered by the profession which acknowledged him as one of its leaders, Isaac E. Taylor lived an example for emulation by his survivors and successors, and rests from his labor, leaving a reputation unassailed by enmity and beyond the reach of jealousy.

By the council:

JOHN G. ORTON, M.D., *President.*
E. D. FERGUSON, M.D., *Secretary*

MISCELLANEOUS.

DEATH FROM CHLOROFORM.—Another case of death during the administration of chloroform is reported in the *British Medical Journal* of October 5, 1889. A lady, equable temperament, desired to have some teeth extracted, and insisted upon an anæsthetic. Her medical attendant administered chloroform. The patient was seated in an easy chair, and, after inhaling a few breaths of chloroform, she slipped down in the chair, and her pulse and breathing were both found to have stopped. Artificial respiration was at once resorted to, but without success. It seemed perfectly clear that the patient was not anæsthetized when she died, as she had only just commenced to inhale the chloroform, and, of course, no attempt had been made to extract her teeth. The coroner's jury returned a verdict that death was due to syncope, and that no blame whatever was to be attached to the administrator.

Syncope, as has long been known, will result from any very violent emotion, and especially from the effects of fear. In a case recorded in Germany a few years back, a female patient visited a dentist, and requested him to extract some carious teeth, demanding at the same time, that she should be chloroformed. The dentist, very properly, explained the risks of chloroform, and suggested nitrous oxide; but his patient persisted, and he consented to humor her. Having, however, a wholesome dread of chloroform, he substituted eau-de-cologne, and bade her inhale the supposed anæsthetic from a folded towel. After two or three inspirations she suddenly fell from her chair, and died. That death occurs from fear in some cases during the earliest stage of chloroforming is unquestionable; and as it is predisposed to by the sitting posture, and by forcibly restraining the patient's voluntary movements, there can be very little doubt that in every case in which chloroform is to be administered the recumbent posture should be insisted upon, and a loose dressing-gown substituted for the usual every-day costume. There is another point of no small importance, which is, that chloroform increases the liability to death from "reflex syncope." A person partly under chloroform is more prone to die from fright than one to whom chloroform has not been administered. Nor must it be forgotten that deaths occur when only one or two inspirations of chloroform have been taken; this is liable to take place when a too concentrated vapor (that is, one of greater strength than four per cent.) is employed. In the event of syncope occuring in one of the ways above indicated, the line of treatment which offers the greatest chance of success is total inversion of the patient, while care is taken that the rima glottidis is maintained open for the entrance of air. Dr. Chisholm, who has strongly supported this, Nélaton's original manœuvre, has recorded some highly instructive cases in which the method of inversion, being promptly performed, effected resuscitation, and so saved the patient's life. But here a caution must be given. Nélaton's method is valuable only in primary syncope, and is absolutely dangerous in cases of heart failure consecutive upon pulmonary engorgement and overfilling of the right heart; or, in short, when respiration stops before the heart ceases to beat. Cases belonging to this last category do not occur, as a rule, until the later stages of chloroformization, and the respiratory failure is then due to overdosage with the anæsthetic.—*Medical Progress.*

AMBER AND AMBERGRIS.—Ambergris, which is used as a basis for nearly all standard perfumery, was first found an unattractive mass floating on the surface of the sea or lodged upon the shore. How so unlikely a substance ever suggested itself as a perfume is unknown, but it has been in use for centuries, and it is only in comparatively recent times that its origin has become known. It is nothing more than the morbid secretion of the liver of a sick spermaceti whale. It is described as a fatty, waxy substance, disagreeable to sight or touch, but even in its crude state exhaling a pleasant odor. The crude substance is subjected to chemical action to extract the active principle, called amberine. It was recently reported that a Maine fisherman picked up a mass of the substance which nearly filled a barrel and is worth $25,000. This is probably an exaggeration both as to size and price, for the largest piece on record was found on the Windward Islands, weighing 130 pounds. This was sold for about $2,600.

Amber was also first found on the shores of the sea after severe storms. For a time its origin was unknown, but it was early put to use and regarded with a superstitious awe by the ancient Greeks and Romans, its peculiar electrical qualities being noted by them. It is now thought to be the gum of forest trees which perished ages and ages ago, the lands upon which they flourished having become the ocean's bed. Amber has no fixed value, the price being regulated wholly by size, quality, and other considerations. Drops of amber in which are embedded insects of those ancient times command fancy prices, while the more common kinds are used for making a certain kind of varnish and even in medicine. The world's supply of the two, amber and ambergris, does not wholly depend upon what may be accidently found. Dredging for amber is now systematically carried on by regularly organized companies, and all spermaceti whales killed by whalemen are subjected to a pretty thorough post-mortem examination, the find of ambergris in the monster's interior often being vastly more valuable than the oil extracted from his blubber overcoat. —*Scientific American.*

THYROIDECTOMY: TRANSPLANTATION OF THYROID TISSUE FOR MYXŒDEMA.—Goitre is such a rare disease in the United States that the subject of its operative treatment is of but little practical importance for most of our readers. Nevertheless, the results obtained are so mysterious that perhaps a few words concerning them, as at present illustrated in the wards of Professor Theodore Kocher, of the University of Berne, may not be devoid of interest. As is well known in the great majority of cases, myxœdematous diseases, after a time, follow the complete removal of the gland. This Professor Kocher has found may be avoided by leaving in the neck one lobe, or even part of a lobe of the gland. By means of careful antiseptics the operation is so robbed of its terrors that we have seen a patient four days after it entirely well, the wound being completely healed.

A very bold experimental operation for the relief of the myxœdema, which has followed complete removal of the gland, is now under trial. It consists in inserting a fresh healthy piece of the gland in the abdominal cavity, with the hope that it may form attachments and perform its mysterious function. In one case, probably by pressure upon the large intestines, the inserted mass, after the complete healing of the wound, caused such violent collicky attacks that it had to be removed, but in most instances no evil effects have followed the insertion. What becomes of the transplanted gland is not yet known.

A case was recently shown us that had been operated upon about three months previously, in which the presence of the gland in the abdomen could apparently be still demonstrated by palpation, etc., and in which, the patient asserted, his general condition was much better than before the abdominal section. It will be a very strange physiological fact if it should be found that the transplanted gland has the power of taking root and adapting itself to its new environments. It is, perhaps, allowable to add that the glandular masses for transplantation have been taken from the necks of individuals with hypertrophied thyroids.—*Therapeutic Gazette.*

WEIL'S DISEASE has not yet taken an assured place in medicine as a distinct affection, although there are many good reasons for supposing it to be an independent disease and it is not improbable that it will be recognized as such in the near future. A good summary of the symptoms which are supposed to characterize it is given by Paul Chéron in *L'Union Medicale.* It attacks suddenly men in the prime of life, beginning with headache, fever rapidly reaching a temperatare of 103°-104°, and sharp pains in the muscles, particularly those of the calves of the legs. There is sometimes delirium. The appetite is lost, there is frequently vomiting and more rarely diarrhœa. Jaundice soon appears, with or without clay-colored stools. Albuminuria is almost invariable, often accompanied by casts in the urinary sediment. The liver and spleen are enlarged and the hepatic region is painful. The condition of the patient looks serious, when there comes a sudden remission, the fever falls and all symptoms improve. Convalescence seems near, but in most cases there is a recurrence of the symptoms after a few days, the second attack being less violent than the first; recovery finally ensues almost always, but with a slow convalescence. Among the rarer symptoms are rose spots, erythema and other eruption, and epistaxis and other hæmorrhages. It is therefore evident that the disease somewhat resembles on the one hand catarrhal jaundice, and on the other typhoid and bilious fevers. But there are some striking clinical and pathological features of Weil's disease which go far to exclude the diagnosis of irregular forms of the other affections mentioned. These are the characteristic relapse, the well-marked pains in the legs, the constant albuminuria, and most of all the pathological changes found in the few post-mortems made, consisting of parenchymatous degeneration of the liver, kidneys and heart with enlargement of the spleen.—*N. W. Lancet.*

THE VIRGINIA BOARD OF MEDICAL EXAMINERS received the following answers to questions put to graduates of medical colleges, who, under the Virginia law, applied for licenses to practice medicine in that State:

Describe the larnyx. *Ans.* The larynx is composed of cartilage. The œsophagus passes through the larynx.

What is the function of the liver? *Ans.* Do not know.

Give tests for arsenic. *Ans.* Sulphuretted hydrogen is one. Don't know rest.

Give test for mercury. *Ans.* Do not remember.

Give dose of tartar emetic. *Ans.* Ten grains.

Give dose of sulphate of atropia. *Ans.* Hypodermatically ten grains; by mouth sixty grains.

Give dose of corrosive sublimate, *Ans.* One grain.

How would you treat placenta prævia? *Ans.* I don't know what it is.

Give dose of powdered cantharides. *Ans.* Forty grains.

What is the source of iodine? *Ans.* It is dug out of the earth in blocks like iron.

Describe dengue or break-bone fever. *Ans.* By four applicants: A fever that comes on soon after the bones are broken. By one applicant: The patient should be cautioned against moving, for fear the bones should break.

Describe the peritoneum. *Ans.* It is a serous membrane lining the belly and extending into the chest, covering the heart and lungs.

Anatomical ignorance is bad enough, but the ignorance of doses of powerful drugs is terrible in its results.

It is hardly necessary for us to point out that the doses of atropine here given are sufficient in one case to poison over twenty men, and in the other instance to kill, perhaps, over one hundred adults. The proper punishment for the man who would order forty grains of cantharides would be the administration of the drug in consecutive divided doses, lest the one should kill him too soon.

For every candidate applying for the right to practice medicine in the State of Virginia, where the people are intelligent enough to protect themselves, fifty similar and worse dealers in human lives enter this and other States, where no examination frightens them away; and it is worthy of remark that the candidates in Virginia were not only ignorant of medicine, but were ignorant enough of their own mental state to dare the terrors of an examination. The provision of a State Medical Examining Board is not a measure to be engineered through the legislature by the medical profession. It possesses far less importance to us than to the laity, for one doctor can generally grasp the calibre of another and protect himself. It is the people who suffer in silence, instead of protesting against such fearful homicidal practitioners. To-day the writer of this editorial read of a case where ergot was given in the early part of the second stage of labor, and yesterday he heard of a woman killed by a great, burly brute who was ignorant of the most simple form of obstetrical procedure. Yet with the perversity of human nature, the apothecary who dispenses poisons must be examined, and the man who orders the poison prescription goes unendorsed. Two means of remedying this crying evil are possible. The first, is to prevent the entrance of the money-grasping ignoramus into the sacred guardianship of life, home, and family. The other, is for the laity to inform themselves of the standing of surrounding medical schools, and refuse to recognize the degree of an institution turning out unqualified men or of one of which they know nothing. When the people become educated well enough to know when their wives, children, and those dearest to them are killed because of the employment of a miserable charlatan, then, and not till then, apparently will an effort be made to prevent this "yearly sacrifice."—*Brooklyn Med. Jour.*

In a recent paper by Samuel A. Fiske, A.M., M.D., entitled "The Effect of the Climate of Colorado upon Phthisis Pulmonalis, as Shown by the Analysis of One Hundred Recorded Cases," which he read before the Colorado State Medical Society, the author gives some very interesting figures, and shows the benefits to be derived by phthisical patients from a sojourn or permanent residence in that climate. He divides the patients into four classes :

Class I.—All those who were able to follow their occupations without any recurrence of their former symptoms, and others, who, though still carrying some evidence of their disease, are able to pursue their occupations without any serious inconvenience. All having been very much improved by their residence in Colorado.

Class II.—In this he has placed those who have shown improvement, but in whom the improvement has not been so marked as in Class I. It embraces some who, after making some very considerable gains in this climate have considered themselves able to return to their homes. Others, who are in the chrysalis state are in process of formation for the first class. And others, who though improved, and who, though able to work, have to use precaution and limit their exertions.

Class III.—Those who have not done well in Colorado. (The author thinks a great many of this class did not do well through some imprudence of their own, viz., excessive horseback riding, fishing excursions, returning East too soon, or pneumonia contracted from taking a Turkisk bath.)

Class IV.—Those who died.

The first class numbers 50 per cent. of all cases ; the second 17 per cent.; the third, 7 per cent.; and the fourth, 26 per cent.

By combining class I and II we really have 67 per cent of all cases benefited by a residence in Colorado, *i. e.*, benefit may be expected in two out of three cases which go there.

As regards pulmonary hæmorrhage, he says :

"It has often been urged that high altitudes are not adapted to hæmorrhagic cases, and that, therefore, persons suffering with hæmorrhages should not come to Colorado. Let us see what lessons can be gleaned from my tables.

"I find that there were forty-four cases who had had hæmorrhages, more or less severe, and more or less numerous. Of these forty-four cases I find that eleven or twenty-five per cent. had a recurrence of hæmorrhage in Colorado, which certainly does not uphold the statement, so often made, that this altitude is conducive to hæmorrhage. Two patients who never had hæmorrhage before coming here, had some in Colorado, and one died from the effects of his. In these cases, however, the cause was due to unusual exertion, and, indeed, many of the cases of recurrence can be traced to immoderate exercise. Of the forty-four hæmorrhagic cases I find that,

26, or 59.1 per cent. were much benefited here.
7, or 15.9 " were somewhat benefited here.
2, or 4.6 " were made worse.
9, or 20.4 " died.

That is, 75 per cent. were benefited, and 25 per cent. grew worse or died. This certainly does not uphold the idea that Colorado is not good for hæmorrhagic cases; it goes to prove, very decidedly, the direct contrary, that such cases do admirably here."

He finishes the paper by drawing the following conclusions, namely: "That, taking cases as they come to us, we can expect improvement in two out of three; that men do better than women, as in fact they do anywhere; that persons over twenty years of age do better than those under twenty, and that those over thirty years of age do still better; that heredity forms no bar to a person's coming to Colorado, but that the more indirect the inheritance the better are the chances; nor should a hæmorrhagic tendency debar one from coming, as such cases do admirably well; that altitude *per se* is not a producer of hæmorrhage; that the chances of obtaining an arrest of trouble are improved by the patient's possessing a sound digestion, a good appetite, and a pulse and temperature not much raised above the normal; and that patients in the early stages of the disease, especially if their digestion be sound, appetite good, and pulse and temperature nearly normal, are the fittest subjects for our climate, whether they have any hereditary tendency or not."

Suprapubic Cystotomy in a Case of Enlarged Prostate and False Passage (M. Stamm, M.D., Freemont, Ohio).—At the last meeting of German surgeons in Berlin, in speaking of the treatment of enlarged prostate, Fürstenheim mentioned a case occurring in the practice of Israel, which the latter surgeon presented to the Surgical Society of Berlin some time ago. This patient was a female, and for some reason Israel punctured the bladder above the symphysis. This puncture resulted into a fistula through which the patient could empty her bladder, by means of a catheter, without any pain. Fürstenheim reasons from this case that a similar method, preferably an incision, might be adopted in cases of hypertrophy of the prostate where patients have great difficulty in introducing a catheter. Most surgeons seem to agree that it is not so much the enlarged prostate as the catarrhal condition of the bladder, which causes the real danger in such cases. In my opinion a suprapubic cystotomy would greatly reduce this danger, and would admit of a thorough examination and irrigation, neither of which can so well be accomplished by any other method.

The following case furnishes a result which Fürstenheim would expect from such a procedure:

C. C., of Kansas, Ohio, about seventy-five years of age, had been suffering from prostatic hypertrophy for several years, and had to draw his urine by means of a silver catheter for a long time. On April 6, 1888, as he was not able to empty his bladder as before, he came to my office. Not finding me at home, and being in great agony, he went to some other physician, who, after protracted efforts, made a false passage, but did not succeed in getting any urine. In the morning of April 9th I was called in consultation with Dr. Jump, of Kansas, and found the bladder distended up to the umbilicus; scrotum and perineum were of a dark purple color, some spots showing already signs of gangrene. Every attempt to get into the bladder through the urethra was frustrated. Prostate examined through rectum seemed very much enlarged. As parts along the urethra were very much bruised and mortification appeared imminent, I decided to make a suprapubic incision. After having opened the bladder a very large quantity of urine mixed with some slime was emptied. The middle lobe of the prostate gland was of the size of an egg, and acted as a valve upon the urethra, a considerable pocket of the bladder was also formed by it. The bladder was then stitched to the wound and a strip of iodoform gauze left in for drainage and as a disinfectant.

Patient rallied well from the operation, but his fever kept up for about one week until the bruised parts had sloughed off. About three weeks after the operation the opening had contracted so that a large-sized catheter could easily be introduced. I had a silver canula made after the shape of a tracheotomy tube, but patient found he could get along better without such a contrivance. He can now retain his urine for several hours, empties his bladder with a soft catheter through the fistula about six times a day, and is better satisfied with his present condition than he had been for several years before the operation.

FOREIGN BODY IN THE LARYNX.—Dr. Leyden reports a case of foreign body in the larynx. The body was a stone that had been swallowed by a child; it remained in the air-passage for fifteen months without giving rise to unpleasant symptoms. While in apparent good health, the child fell down and suddenly choked. At the autopsy the stone was found.

FATAL PUERPERAL FEVER CAUSED BY DISCHARGE FROM THE LACHRYMAL SAC OF THE ATTENDANT.—Dr. M. Loeb, of Frankfort-on-the-Main, gives interesting details of a series of cases of puerperal fever occurring in the practice of a midwife, in some instances running a fatal course, the only discoverable cause for which was a blennorrhœic discharge from the lachrymal sac of the midwife in attendance.

The first case reported was that of a healthy woman, æt. 29, who gave birth to a healthy child after an easy labor. Twenty-seven hours afterwards she was taken with abdominal pain, difficulty of breathing and a rattling on the chest. The chest symptoms afterward subsided, and the abdominal ones got worse. The abdomen became distended, and the patient died on the sixth day after delivery. The autopsy showed the uterus still large, a slimy purulent layer on the mucous membrane; a flat wound on the cervix uteri; slight phlegmonous inflammation of the left parametrium, with lymphangitis, general peritonitis, and slight pleurisy.

Then came the search into the cause of the illness, which was plainly of an infectious nature. It was shown that the midwife had disinfected her hands in a three-per-cent. carbolic solution; that the last twelve cases attended by her had all recovered. Still, the gentleman called in felt sure from various causes that the infection had been communicated by the midwife in attendance, but he was quite in the dark as to the particular mode in which the communication was made. The first clue came from the health officer of the district, who assured Dr. Loeb that that was the fourth fatal case in the practice of the midwife in the short space of three months. A gentleman practicing in the district supplied other data. One parturient woman died three months before with rapid septic peritonitis with copious exudation, and with purulent contents in the tubes. Two other cases occurred later, but they were not thought sufficient to justify a complaint. There were thus four fatal cases of peurperal peritonitis in the practice of one midwife between the end of April and the middle of July last year. The singular similarity of the symptoms pointed to an identical poison in all the cases. The poison could not be carried from one patient to another, as the great interval of time between the fatal cases and the large number of intercurrent cases—twelve—which escaped the poison, proved. It was probably something peculiar to the midwife herself. On searching very carefully, he discovered a cicatrix on the cheek resulting from a lupus that had healed. The thought immediately occurred, may there not be stenosis of the lachrymal canal here, or blennorrhœa of the sac? There was, in fact, stenosis of the lachrymal canal. On pressing in the neighborhood of the sac, pus came out of the lower lachrymal canal. The fact that the pus from this part contains the staphylococcus pyogenes in ninety per cent. of cases, as well as numerous other pyogenous micro-organisms, renderered it probable that in spite of frequent disinfection of the hands the finger of the midwife had conveyed the poison direct from the eye to the patient. What is known further of the cases increases the probability that this was really the channel of infection. From July, 1888, to July, 1889, is a year, and the fact that although the midwife has continued her practice as before, but without another fatal case occurring, and that she has throughout acted on the supposition that the lachrymal sac was the origin of the fatal diseases, renders it extremly probable that the danger did indeed lurk in that little-suspected drop on the cheek. The case recalls the tragic one related by Meigs, of the American physician, whose midwifery practice was frightfully deadly, and who was subsequently discovered to be suffering from an ozæna that was the cause of all the havoc he wrought. The route was very direct, from the ozæna to the handkerchief, from the handkerchief to the hands, and from the hands to the vaginal discharge, or lacerations of the patients.— Berlin correspondence of the *Med. Press*, Aug. 28, 1889.

MEDICAL NEWS AND NOTES.

Dr. Francis J. Quinlan of this city was recently appointed Lecturer on Diseases of the Throat and Nose in the New York Polyclinic School and Hospital. The Doctor has been associated with the Polyclinic for five years, and during that time has gained for himself the reputation of an able teacher. He is likewise connected with the Eye and Ear Hospital, and is Assistant Surgeon in the Department of Diseases of Throat and Nose in the Vanderbilt Clinic of the College of Physicians and Surgeons.

Seven druggists of Kansas City, Mo., were arrested on October 28th on the charge of counterfeiting Bromidia. They were found guilty and fined five hundred dollars each. This substitution of drugs is indefensible and physicians should always be on their guard against it.

Mr. Reginald Harrison has received the appointment of Surgeon to St. Peter's Hospital London, and will remove at once from his home in Liverpool to 6 Lower Berkley Pl. Postman Square London, W.

On October 22nd, Dr. Phillippe Ricord died in Paris, at the age of ninety. This eminent man, known to medical men all over the world, and especially to those who devoted themselves to the study of venereal diseases, was born in Baltimore of French parents. For years he has contributed to that branch of the profession which he espoused, and much of the knowledge of venereal diseases, which we now possess, has been the outcome of his own labors.

The Executive Committee of the New York Post-Graduate have established a clinic for diseases of the rectum to be under the care of Dr. Charles B. Kelsey, for the treatment of poor persons suffering from these diseases. Dr. Kelsey will also give clinical instruction in the Post-Graduate School on this subject. It is said that this is the first institution in New York City to organize such a clinic, which, however, has been long needed.

The Treatment of Locomotor Ataxia by Suspension. (Chas. L. Dana, M.D., in *Boston Med. and Surg. Jour.*). The author has, up to the present time, treated 21 cases by suspension, nearly all of whom had been suffering from the disease for from six to ten years, with the results noted in the following table:

Very marked improvement in - - - -	4
Much improvement in - - - - - -	3
Slight improvement in - - - - - -	7
No improvement in - - - - - - -	4
Treatment discontinued in - - - - -	3
Twenty of these patients were males, one female. Total,	21

The improvement was most frequently in the gait, strength and capacity for locomotion generally with a subjective sense of better physical health. Next to this there was improvement in regularity of the bowels, in control of the bladder, in sexual power and in the pains. In one case vision was improved but in no case did the knee-jerk or light-reflex return. The most marked improvement occurred, as a rule, in walking cases although one bedridden patient was able to walk with assistance after treatment. In the second stage of tabes, suspension is remarkably helpful in a good percentage of cases; in the third stage, patients are often improved as regards the bladder and rectal symptoms, and the pains are sometimes relieved. His results agree with the reports of others, viz: great improvement in 15% to 20,% moderate improvement in about the same proportion. He says: "Suspension is an undoubted acquisition to the therapy of tabes. In the light of my experience all the *à priori* condemnations of the method seem to me very absurd." The number of suspensions necessary to secure the best results varies. One patient was suspended over ninety times, sometimes twice daily. Motchoukowsky kept up suspension for nearly a year, giving 80 or 90. The author has several times suspended a patient 70 years old, giving comfort and relief. Has used the chin and arm supports and the chin support alone with a spring balance, but can not state that one method is superior to the other. He has had no accidents worth mentioning, but states that three fatal cases are on record, a good many syncopal attacks have occured and warns the operator to use care and be attentive to details. The usual effect on the heart is to slightly accelerate it and raise the arterial tension, but in several of his cases he noted a slowing of the heart.

A TIMELY REMINDER.—The *Boston Medical and Surgical Journal* reminds its readers in the hub city that " woman has some organs outside the pelvis."

These are words spoken in season, and they are good to look upon, like " apples of gold in pictures of silver." Some day a monument of brass will be erected over the speaker of such timely words, to commemorate their moral courage. There is salvation for woman in these words. What gynæcology, returning to reason, is beginning to recognize as the nerve counterfeit of gynæsiac disease, will make the reproach cast on American gynæcology by an English gynæcologist, that " now in America the womb is to have no peace," soon be (and is now) no longer justifiable.—*Alienist and Neurologist.*

LAWSON TAIT ON NEPHRORRHAPHY.—At the recent meeting of the British Medical Association, this distinguished surgeon remarked he regretted ever having performed this operation, and in no instance was the person operated upon benefited, and one had since died under circumstances which might be fairly attributed to the nephrorrhaphy.

AN actress is said to have reduced her weight fifty pounds in twenty days. Her method of diet is nearly as comprehensive as that of Carly Carne, in Blackmore's romance, " Springhaven." She lives on water and one orange per day, and takes three Turkish baths weekly.

DR. T. GAILLARD THOMAS has resigned the Chair of Clinical Gynæcology in the College of Physicians and Surgeons.

PRICEBURG, near Scranton, Pa., is suffering from an epidemic of typhoid similar to the famous Plymouth outbreak, and due to water-infection. Fifteen per cent. of the population is said to be affected already.

TYPHOID fever is epidemic at Aurora, West Virginia, and it is said the country for miles around is infected. "There is scarcely a family without one or more of its members prostrated with the disease, and in some localities there are scarcely enough well persons to nurse the sick."

THE character of the pain will differentiate sufficiently a conjunctivitis from an iritis, says Foucher; in conjunctivitis it is localized in the eye or eyelids; in iritis it radiates round the orbit.

CORONER'S juries proverbially bring in curious verdicts. The latest is by a Pennsylvania jury; an embankment caved in on some railroad laborers, and the verdict was: "Died of gravel."

THE new chapel at the University of Virginia, in which the late Dr. James L. Cabell took such active interest, will contain a memorial window in his memory. Contributions for that purpose of not more than $3.00 by alumni of that institution may be sent to Dr. Wm. C. Dabney.

SMALL-POX is stated to have greatly diminished in Chili, owing to the spread of vaccination. In 1880 there were 7,254 deaths from this disease; in 1883, 3,188; in 1885, 3,138; and in 1888 only 1,477. The death-rate, however, taken on the whole, is still high, owing to the want of sanitation among the people.

THE Trustees of the Johns Hopkins Hospital have authorized the issue of a monthly publication to be known as the *Hospital Bulletin*. It will contain announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital, reports of lectures and all other matters of general interest in connection with the work of the hospital. Nine numbers will be issued annually. The first number will appear November, 1889. Why is it called a monthly?

The subscription price will be one dollar per year. Subscriptions may be sent to The Publication Agency of the Johns Hopkins University, Baltimore, Md.

PROF. SEMMOLA, in a lecture delivered at the University of Naples, has again called attention to his method of treatment of cirrhosis of the liver. The method is very simple, and consists in the enforcement of a pure milk diet, no solid food whatever being allowed. It is only in the earlier stages of the disease that a cure can be expected—before atrophy of the organ has advanced.

LARAMÉE asserts that the convulsions of uræmia are, so to say, concentrated more than in the other convulsive diseases.

T. PRIDGIN TEALE, F. R. C. S., etc., delivered the address in surgery at the late meeting of the British Medical Association, choosing as his subject, "Detail in Surgery." Speaking of ligature of arteries, he said:

"It happened not long ago that I had to deal with a wound of the brachial, at the bend of the elbow. Esmarch's tourniquet enabled me to easily expose to the eye a longitudinal slit in the artery. I applied a ligature on both sides of the puncture. There were then clearly exposed to view the two ligatures and about half an inch of the artery containing the slit. It occurred to me to divide the artery between the ligatures, and so to relieve the obvious tension. I then appreciated what I had never before realized in connection with ligature of an artery, the immense elasticity of the arterial coats. The separated ends receded fully half an inch from one another. The question at once occurred to me: Can it be right ever to tie an artery by a single ligature, and to leave this powerful force of elasticity to act upon ulceration of the coats and gaping of the ulcer, with the risk of final disturbance by retraction of the divided ends when ulceration has completed its work? May we not find here an explanation of the numerous failures of ligatures of the great arteries, twenty or thirty years ago, and of the fatal secondary hæmorrhages, chiefly from the distal end? Secondary hæmorrhage and fatal results will, by this plan of dividing the artery between the ligatures, be thereby rendered extremely improbable. Recently, I assisted my friend, Mr. R. N. Hartley, in a case in which he first ligatured a femoral, and, a week later, the external iliac on the same side in the same patient. On both occasions he doubly tied and divided the artery, with admirable results. This principle, proposed by Abernethy and afterwards forgotten, has recently been restored to practice at St. Bartholomew's Hospital by Mr. Walsham, and is, I believe, practiced elsewhere. May we not call this 'a detail' in the operation of tying an artery? Does it not embody a principle—the principle of physiological rest? Are we to recognize and act upon the fact of the elasticity of an artery? or are we to ignore it, and thus place our patient at the mercy of elastic drag, tension, ulceration, retraction when liberated, and secondary hemorrhage?"

Mr. Teale regards this principle of *rest* as an important factor in the healing of any tissue.

In another portion of this address, speaking of the sphincter ani in the surgery of the rectum, Mr. Teale said:

"There is a detail in operations on the rectum or anus, which, rightly carried out, contributes very greatly to ease in operating, to the comfort of the patient after the operation, and to the permanency and perfection of the result. As a preliminary step, in every operation on the rectum or anus, there should be dilatation of the sphincter ani by the fingers. First and most conspicuous in this relation is bleeding piles. Some twenty-five years ago I was asked to operate for bleeding piles on a gentleman about thirty-years of age. On mentioning the case to my father, he said: 'Dilate the sphincter, and most likely you will never have to operate on the piles; they will be cured.' His anticipation proved to be correct. His advice was acted upon, and the gentleman has remained well to the present time. So late as in 1887 did M. Verneuil bring this subject as a novelty before a meeting of surgeons in Paris, nearly all of whom were entirely ignorant of the question. I now rarely operate on internal hæmorrhoids without having previously tested the effect of simple stretching of the sphincter. The stretching at once displays the piles to view, and places them in a ready position for being seized and dealt with. Another advantage is that, after the operation, the parts remain at rest, and the wounded tissues are not liable to protrude and be strangled by a resentful sphincter. Also, if there be bleeding, there is great facility for escape and discovery of the blood, and therefore less danger of concealed hæmorrhage, which may fill the rectum with a large clot, perhaps only to be suspected from the pallor and feeble pulse of the patient. A further advantage is that wounded and granulating surfaces within the rectum are not interfered with or kept in a painful or irritable state, after the fashion of fissure, by an over-active, excitable sphincter. Two cases have recently been under my care in which long-continued suffering, after removal of piles without stretching of the sphincter, was at once cured by simple dilatation. This dilatation is an equally important preliminary in treating fistula in ano."—*Pop. Science News.*

SODA WATER ON DRAUGHT.—A correspondent supplies us with some particulars of patents now on view in operation at the Brewers' Exhibition at the Agricultural Hall, which, besides being of great interest, seem likely, eventually, to be of practical utility to the profession, more especially, perhaps, to the hospitals, where economy is a matter of such importance. "Tubes," as they are now commercially called, which have been so long known to the medical profession for the storage of nitrous oxide gas, are being used for the charging of water, or any fluid such as wine, milk, etc., with carbonic acid gas brought from springs in Germany, where it is given off in a pure and unadulterated state. By simple but very efficient mechanism any filtered water can be made equal to the best waters as sold bottled. Oxygenation, æration, the charging of waters or wines with carbonic acid gas, can all be done at home at a very small cost, one penny for the charging of the fluid equivalent to one dozen bottles. To hospitals this will be an immense saving. It is virtually soda water on draught. One large place of amusement is said to be about to adopt the process, and will be able to serve effervescing water at almost a nominal cost.—*Lancet.*

BILLROTH ON THE DANGERS OF CARBOLIC ACID.—"The following letter of Dr. Th. Billroth, of Vienna, has been published: 'I have lately seen four cases in which fingers, which had suffered a most insignificant injury, became gangrenous through the uncalled-for application of carbolic acid. Carbolic acid is now much less used in surgery than formerly ; we have only gradually become acquainted with its dangers. The acid may not only cause inflammation and gangrene, but also blood-poisoning, and so may even prove fatal. It is useful only in the hands of a skillful surgeon, and ought never to be used without his advice. The best lotion for recent injuries is the ordinary lead lotion, which can be bought at any chemist's. The best antidote in carbolic-acid poisoning is soap, which should be taken immediately and repeatedly until all symptoms of poisoning have disappeared.' "—*Lancet.*

"ANGLO-AMERICAN VIENNA MEDICAL ASSOCIATION."—A meeting of British and American physicians was held recently at Vienna to consider the question of establishing an association for the purpose of furnishing all needed information to English-speaking medical men, coming to study in Vienna. A large proportion of those now in the city were present, and it was resolved to start such an association, under the title of the "Anglo-American Vienna Medical Association." A committee of management was appointed, whose chief duty will be to supply information to newcomers on their arrival as to matriculation, medical courses, lodgings, etc., and when necessary, to call meetings of the association. The committee, on the occurrence of vacancies in their number through members leaving Vienna, will fill these up as soon as possible. The office of the association will be at No. 12, Landesgerichts Strasse. It was agreed that membership should be open to any British or American physician or medical student on payment of an entrance fee of one gulden. The committee expect that towards the end of October the association will be in working order. Meanwhile letters of inquiry, addressed to the president or secretary, will at once receive attention.

THE PREVENTION OF THE SHORT LEG OF HIP DISEASE.—Dr. A. B. Judson, of New York, claims, in a paper read at the late meeting of the American Orthopedic Association, that the short leg can be prevented by inducing the patient who wears the hip-splint to observe the natural rhythm of the gait in walking, dividing the time on the ground equally between the two feet, or rather between the well foot on one side and the hip-crutch of the splint on the other side. He believes that if the patient, by precept and drill, is induced to walk habitually in this way, the affected limb will incline toward abduction in order to reach the ground and do its share in the work of locomotion. Abduction and flexion, which constitute the dreaded short leg of hip disease, are caused by the patient's efforts to keep the limb off the ground, partly to guard against concussion and partly to keep the limb out of the way of its fellow, which is charged with the chief part of the work of progression. If the affected limb, protected from concussion by the splint, habitually seeks the ground and is active in locomotion, the cause of abduction and flexion is removed. He cited cases illustrating his views.

HYPNOTISM AND MAGNETISM.—At the meeting of the section on Hypnotism, of the International Congress for Psychology and Physiology, August 10th, in Paris, the meaning of the terms "hypnotism" and "magnetism" was under discussion. M. Foul, of Zurich, said these terms were synonymous but corresponded to different theories. Magnetism implies a fluid foreign to the subject affected, and acting upon him; hypnotism only admits that the cerebral states of the subject himself are at work. M. Liegeois shared this opinion and thought these words should have their historic signification. The Congress accepted this opinion and voted that the terms "hypnotism" and "magnetism" should not be considered as synonymous; magnetism should be reserved for the facts belonging to the theory of a fluid, and which are applicable to the phenomena studied since Braid, in accordance with the physical conception of the fluid which he formulated.—*Progres Medical.*

EDITORIALS.

THE SPHYGMOGRAPH AS A NEW RE-AGENT IN PSYCHICAL RESEARCH.— At the Tri-State Medical Association of Alabama, Georgia and Tennessee, a paper with the above title was presented by Dr. J. E. Purdon. It is very evident that the gentleman who wrote that paper is a thinker, but he has raised the consideration of a theory that is not entirely new. Dr. Purdon claims to have discovered in many instances a uniformity in pulse tracings between certain individuals who are in proximity to one another. It is necessary that one pulse tracing should conform to the other—that of the weaker conforming to that of the stronger. His experiments appear to have been made on criminals who were separated by bolts and bars and walls. He holds that the nervous influence, like electricity, can annihilate space and pass through material obstructions without leaving any trace on the matter through which it has passed. The latter statement will probably not be denied by the most skeptical. There were said to be peculiar noises in the room where the experiments were made—rappings on tables, "noises produced by the passage of this subtle fluid (nerve impulses) through non-conducting media which would be encountered here and there," and "little thunders, analogous to the thunders of lightning."

The essayist thought that currents of thought passed from one mind to another and he deduced well known observations to prove that view.

All of this has a direct bearing upon the suggestibility of the hypnotic condition.

It is high time that scientific men should cease from denying the existence of anything about which our knowledge is not perfect. On the other hand it is well not to accept as a fact any statement which seems to be supported by incomplete evidence or that seems to be upheld by *subjective* evidence alone. In other words, until a fact is proved beyond a reasonable doubt, it is better and more philosophical to occupy the ground of agnosticism ; and this implies cold philosophic equilibrium.

It is needless to review the proof of the genuineness of hypnotism. The English surgeon of Manchester, Braid, robbed hypnotism of its mystical character and set it on a firm foundation when he caused his wife to become profoundly hypnotized by directing her to stare fixedly at a broken china tea-pot. To the mind of everyone this experiment tore the mantle of mystery from around the subject and proved that the capability of entering into this condition lies inherently in the subject, and is not an induced one, produced by a peculiar influence emanating from the hypnotiser. The immortal work of Charcot at the Salpêtrière endorsed by his followers, Feré, Binet, Luys and others of the Paris school, and the yet more rational and scientific endeavors of the Nancy school, as represented by the originator of this school, Bernheim, have proved the correctness of Braid's statements, and now when the cold-blooded, item-gathering, phlegmatic, formulating Germans, represented by Kraft-Ebing and others, have arranged for us in numerical order, the signs and symptoms of *la grande hypnose* and *la petite hypnose*, it is time for skeptics to cease criticism until they have removed and wiped their presbyopic glasses for the purpose of seeing better. That many errors have been made and that many conclusions have been drawn from insufficient evidence there can be no doubt; particularly has this been in the case in the Paris school, as represented by Feré, Binet and Luys. All of their experiments have not been verified by others, and those particular ones of M. Luys in regard to "Medication à Distance" are too clearly a matter of suggestion and self-deception to admit of more than a reading.

That there exists such a thing as influence in the world there can be no doubt; that there are degrees of this there is likewise no doubt. Who will set the limit to degree? The existence of a magnetic fluid was the dogma of Mesmer. The "tea-pot" experiment of Braid seems to have excluded the existence of such a thing as the necessary element in the production of hypnosis, and yet in the suggestions given by a hypnotizer to a subject there is a transference of influence.

It is with this modification of the magnetic force that a routed and demoralized army is transformed in the twinkling of an eye into an exultant and victorious host. And whence proceeds this influence? —why, from the words, looks and gestures of the leader. They take the suggestion of courage and victory from the flushed face, flaming eyes and uplifted hand of the chief. It is by this influence that the orator entrances an audience, hushing them into the silence of subjection to his will or rousing them into the frenzy of liberated passion. It is this influence which telegraphs panic fear through a crowd and causes every individual to be absorbed by one thought—safety in flight; and it is by this influence that such demoralization can be cut short in its inception.

Space does not obliterate this power, though it would seem to diminish it, and the force of attraction would seem to bear a direct proportion to the propinquity of the subject and object.

The existence of the phenomenon of telepathy may be questioned, since it has not yet been established as an incontrovertible fact; but the numerous instances of it reported throughout the world command attention, if they do not enforce belief. From a philosophical standpoint, the passage of a "nerve impulse" through space seems no more improbable at the present day than the passage of an electric current through space would have seemed one hundred years ago, had such a thing then been suggested. Indeed, not so improbable, since there is hardly a doubt that nerve influence is a form of electricity. Dr. Purdon holds that there proceeds from the cardiac centres of one person influences which act upon the cardiac centres of another in such a way that the heart rhythm of the stronger is induced in the weaker person. It is clear that this theory is a modification of induction by electricity.

Dr. Purdon's experiments are as yet imperfect, and it is necessary that they be undertaken by others who are unprejudiced in favor of the theory. If a number of observers confirm his results in a sufficiently large number of cases to exclude chance as an explanatory cause for the uniformity of heart rythm between people, we will listen to the theory as bearing the germ of a practical truth. The bare possibility of the existence of such a thing we will not deny. We stand as agnostics on all matters that are not distinctly proved as fact or fiction.

If this relationship between hearts be ever proved, we shall then have physical proof for what has merely been substantiated by statement in the past, and we shall realize in the the tracings of the sphygmograph the existence of that beatific condition sung of by the poet—

> "Two souls with but a single thought,
> Two hearts that beat as one."

It is more reasonable to assume that so-called psychology is but the refinement of physiological processes that are not grossly perceptible by our senses. Indeed, that physiology and psychology are not two distinct realms, but that they merge the one into the other as daylight into darkness, between which it is doubtful if the finger of Divinity himself can mark the line of demarcation.

What part psychology will ultimately play in medicine the future will reveal.

Sol esto testis.

WHAT DOES IT MEAN?—We call the attention of our readers to two articles in this number of the JOURNAL, one by Dr. Edward Jackson, of Philadelphia, entitled "Against Sectarianism in Medicine"; the other by Dr. Solomon Solis-Cohen, of Philadelphia, entitled "An Ethical Question," being a reply to Dr. Jackson's article. Perhaps the best way to deal with homœopathy is simply to let it alone, to let it die a natural death and take its place along with those other chimerical and fanciful methods of treating the sick, such as The Weapon Ointment, The Sympathetic Powder and Perkinism or the Metallic Tractors, which from time to time have sprung into existence, had a few followers and then have sunk into oblivion, for in that category does it surely belong. But when one of our own number, a gentleman who stands well in our profession, one who enjoys the honorable title of physician, gets up at a meeting of one of the societies to which he belongs and asks us to receive, into our medical societies and upon equal footing with ourselves, a set of men whose system of dealing with suffering humanity is founded upon a tissue of absurdities, we think it about time to protest, and we are glad to see his article did not go long unanswered. Does he wish the members of the American Medical Association to stultify themselves? If they should grant his request it would be an admission that they do believe in, or at least do not disapprove of that peculiar system which has for its three cardinal principles, similia similibus curantur, infinitesimal dosage and the psoric miasm, as laid down by its founder Samuel Hahnemann. Would he have us follow the banner of Hahnemann, a man who says it took him twelve long years of careful study to find out that the sole true and fundamental cause of such diseases as idiocy, epilepsy, caries, rickets, cancer, asthma, etc., etc., was what—Psora—or in plain English, itch. It were better for poor, suffering humanity had this dreaded ogre remained upon the surface, for then the world would never have known seven-eights of its suffering, we would have no use for our insane asylums or for our hospitals for the treatment of cancer and nervous diseases; the asthmatic would not jump from his bed, throw open the window, stick his head out when the thermometer is below zero and suffer tortures for the want of air; No; we would simply be a world of scratchers. Although this doctrine of psora, which was very near and dear to Hahnemann, is repudiated by some homœopathists, yet it is not more absurd nor less scientific than some other dogmas laid down by Hahnemann and implicitly accepted by his followers, viz: his peculiar methods of administering their so-called remedies and his denial that nature has any curative power whatever. His doctrine concerning these questions is so palpably at variance with all scientific investigation and clinical observation that it is hardly necessary to combat it. Who believes that any effect whatever can be gotten from a millionth of a grain of oyster shell (that was his favorite form of carbonate of lime) let it be prepared ever so carefully, and his instructions carried out to the letter, or who believes that it will require days for that effect to manifest itself, and that during the period which intervenes between the administration of this millionth of a grain of oyster shell and the manifestation of its effects that it is dangerous to give other drugs? As for the disbelief in the curative power of nature we think that if the homœopathists would watch their patients closely and reason logically they would soon give up their false ideas on that point. Dr. Jackson argues that conscientious convictions should be respected. Would he believe a man who would come to him and tell him that he had walked across the Atlantic Ocean, or that he had remained under water for a week, let the poor deluded mortal assert that he believes it himself and argue never so wisely in support of that assertion? No; he would not believe him, neither can the medical profession be expected to accept as facts statements which are most glaringly wrong and unscientific. None of the doctrines of homœopathy can stand the crucial test of scientific investigation, and it only requires time before the bright light of truth utterly extinguishes its false doctrines.

THIS NUMBER OF THE JOURNAL closes the 49th Volume of an existence which we have a right to hope has been always useful, while we know that it has been full of energy and often of enterprise; full of hope for the good of the Profession and care for its mental needs and scientific progress; full of pride in its vast and unexpected discoveries and of joy in its continuous upward advance. The science of medicine denies nothing to scientific possibilities, but examines all, and weighs all, with a judgment whose final characteristic is grave and impartial though its every impulse has been filled with enthusiasm. It has been the privilege of this JOURNAL to present to its readers the widely differing phases of medical thought through a long number of years. Many final judgments on things medical have been recorded in its pages, and many interesting questions, still undecided, have been carefully laid before the Profession. In every branch, in each specialty, we recognize the open questions which cover vast interests, which are still to be studied and patiently investigated, still to be weighed and perhaps not settled for a long time to come. It will be the province of this JOURNAL to watch the varied and shifting field of medicine and surgery and to record monthly for the benefit of its readers those things which seem most important, and those which have the most critical interest for the Profession at the moment then present. The time is passed when an editor could speak *ex-cathedra* on all subjects. Once he was a recognized leader of thought in every specialty. He can now do little more than present to the Profession clear and accurate views of the vast progress which he sees making strides in every direction. He can perhaps indicate to them when to pause and doubt, when to believe and follow; more than this he cannot do.

In the past, the people of the East divided the world into three classes. The proverb which spoke of "he who knows not and knows not that he knows not," said "shun him he is a fool." Of the man who "knows not and knows that he knows not" it said, "he is blind, help him;" and of the man "who knows and knows that he knows," it said, "he is wise—follow him."

These conditions are utterly changed. Wise is the man who recognizes the fact that he knows not. Let us not follow him, but go with him and we will reach at last such learning as our times will call wisdom.

Let this be the province of the JOURNAL now and in the future. It will work together with the great professional workers of the world and with the earnest investigators to whom it has long been known. It will record results, treasure up the achievements of its fellow workers, encourage those tired ones who "know but know not that they know," and remain, as for so many years past, the tried friend and regular visitor of those who value it.

END OF VOL. XLIX.

Champagne ANALYZED

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